THE UNIVERSITY OF HONG KONG

THE IMPACT OF SANDWICH CLASS HOUSING SCHEME ON ADJACENT PRIVATE PROPERTIES

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BY

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Declaration

I declare that this dissertation represents my own work, expect where due acknowledgement is made, and that it has not been previously included in a thesis, dissertation or report submitted to this University or to any other institution for a degree, diploma or other qualification.

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Abstract

Hong Kong is known as a place with high property price. Due to the high property price, people in Hong Kong cannot afford to purchase their property easily.

The property market started to raise in 1980s'. Although the income of the households increased at the same time, it could not catch up with the increase in property price. Thus, a group of household called 'sandwich class' appeared. It means that their household income exceeded the limit of applying the Home Ownership Scheme (HOS) housing but their income could not support them to purchase a flat in the private property market.

Hong Kong government did not provide any assistance to the "sandwich class" until the late 1980s'. The government introduced a Sandwich Class Housing Scheme (SCHS) help those 'sandwich class' households. SHCS consisted of a short term loan scheme and a subsidized housing scheme which aimed at helping the household with weekly income from HK$20001 to $40000. The subsidized housing scheme targeted to build 10000 residential flats for the 'sandwich class'.

In this dissertation, the impact SCHS on the property market is investigated. The subsidized housing scheme provides additional subsidized residential units to the property market. From pervious researches, subsidized housing shows a negative impact to the nearby property market. The position of SCHS is quite different from the normal subsidized housing as the target is the sandwich class household but not the lower ones. Therefore, a hedonic price model is used to test the impact of SCHS on nearby property market. Data is collected from Economic Property Research Centre (EPRC) database, the HKU Real Estate Price Index and Centamap. The results conclude that the SCHS has a negative effect on the nearby private property market. Although the effect on the supply of SCHS is not significant at present, the effect will be more significant if more flats of SCHS with premium paid and put for resale in private property market.

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Chapter 1 - Introduction

1.1 Background

Housing is a frequently investigated topic for research and studies. Throughout the years, housing cannot be separated from our daily needs. In Chinese idiom, “Clothing, Food, Housing, Transportation” are the basic needs for a human living in the society. Moreover, in traditional Chinese society, having a house is an ultimate goal in the Chinese’ lives. If the family had a longer history, they would have a house called “Jo Uk” (house from their former grandparents) which all the family members lives together and it cannot be changed or removed easily. Thus, housing is an important issue for Chinese as it not only has an economic value but also a social value inside.

Hong Kong is a modern society where the old traditions are not necessary to sustain. Still, the traditional view on housing is continued in many people’s mind. After a housing tragedy in Shek Kip Mei in 1950s, the Hong Kong government started to provide public rental housing for people who had difficulties living in private housing. In the policy address in 1976, home ownership scheme was firstly been addressed as a policy of Hong Kong

government to promote home ownership in fulfilling social objective (Governor of Hong Kong, 1976). Therefore, throughout the years, the government used these two schemes to provide housing for the lower-class people in order for their settlement and the housing policy had not been changed a lot since 1976.

The situation changed in 1990s. The government considered that high property price might create a housing problem for the sandwich class citizens. Therefore, the government rolled out a new scheme on housing aiming at helping the sandwich class. The scheme was called the “Sandwich Class Housing Scheme” (SCHS) of which the requirement of applying such scheme was on top of that in the home ownership scheme. The scheme targeted to build 10,000 flats in the first round and the whole scheme was hand over to Housing Society to develop and manage. Finally the scheme was terminated in 1998 as the property market collapsed due to the Asia financial crisis and the vision of the government to provide 85,000 residential flats per year (Tung, 1997)

Public rental housing and the home ownership scheme, being an important housing policy, had been investigated by many scholars in the past. (Wong, 1982; Leung, 1993; Li, 1997). On the other hand, SCHS did not attract research on further investigation on the impact to the property market. Thus, in this dissertation, the SCHS will be discussed in detail for answering this questions.

SCHS was a government policy which directly provided housing for the special class of citizens. In other words, the government provided subsidies for the citizens in housings. Moreover, it would affect the housing supply to the property market as the overall market supply increased.

1.2 Objective

In this dissertation, the SCHS was the key issue to be examined. The main objective is to investigate whether SCHS will cause any impact to the nearby property market. Thus, the objective of this dissertation can be clearly demonstrated by the following sentence:

'To find out the impact of Sandwich Class Housing Scheme (SCHS) on adjacent private properties'

Various data would be collected and measures would be made in order to achieve the objective.

1.3 Organization

This dissertation consists of five chapters. Chapter 1 is the introduction. In chapter 2, a literature review will be given. The review comprises general theory of supply and demand in economics, and the housing policies generally to the housing market. Then a more detailed study on Sandwich class housing policy will be explained. Finally, the main focus of this research on the effect of subsidized housing to the nearby property market will be given.

After the literature review, the hypothesis of this dissertation is given as confining the route of research in this dissertation.

Chapter 4 will be the methodology. In this chapter, the hedonic price model, which is the model used for this dissertation, will be clearly explained. Moreover, the reason for choosing Ma On Shan as the area of study will be explained.

Chapter 5 is the data collection. To apply the hedonic price model in this dissertation, the data is collected from different means like the Economic Property Research Centre, the HKU real estate price index and the Centamap. The rationale of using these sources of data will be given in this chapter.

Chapter 6 is the empirical result and interpretation. The result generated from the hedonic price model will be clearly examined in this part.

Chapter 7 is the conclusion and suggestions for further study. The findings of this dissertation will be discussed. Moreover, the suggestions for further study will be given.

Chapter 2 - Literature Review

2.1 Literature Review on Supply and Demand Theory

2.1.1. Introduction

On explaining the introduction of Sandwich Class Housing Scheme (SCHS), the Supply and Demand theory is employed as it is the basis of all economic activities.

2.1.2. What is Demand

In economics, “Supply and Demand” is a very general theory with different interpretations. Warren (2000) stated that demand will only be met normally when the purchasing power comes. Therefore, the term “effective demand” is used. This was agreed by Lai & Yu (2003) that demand reflects the amount of the consumer prepared to sacrifice in order to obtain a certain amount of good or service in the market.

Deeper in Urban Economic literatures, the study on household demand is narrowed to five major areas namely the Studies on the effect of household socio-economic characteristics, location studies, housing finances and taxation related studies, filtering studies and search behavioral studies. (Fu, 2000) Among the five areas, the first area is discussed more often by the scholars.

In terms of housing, Pozdena (1988) states that the expression of demand for housing is raised from the desire to use housing, which holds a different view from Warren (2000) and Lai & Yu (2003). Pozdena (1988) continues his argument that a consumer's desire is derived upon a variety of complex personal factors, which is the struggle between the taste for housing and other goods and services.

A Pozdena (1988) state that the relationship associated with those factors is called "The Housing Demand Function". The function consists of the price of housing, the price of other goods and services, the financial resources and tastes of consumers, and the number of potential housing consumers.

2.1.3. Factors affecting the Demand of Housing

- Income effects on Housing Demand

Property is a very expensive asset for individuals. How could a person easily get HK$3 million to buy a 600 square feet apartment unit in urban areas in Hong Kong? Income of individuals definitely affects the demand for housing in the property market.

With different assumptions, different scholars have different findings. They argue on the magnitude of income elasticity on affecting the housing demand and the result is listed below.

Study	Price Elasticity	Income Elasticity
H. Rosen, 1979	-0.67	0.35
MacRae and Turner, 1981	-0.89	0.26
Cronin, 1983	-0.63 to -0.79	0.53 to 0.72
Goodman and Kawai, 1986	-0.61 to -1.2	0.64 to 1.1 (permanent income)

Table 2.1 Estimates of Price and Income Elasticity of the Demand for Housing (Source: Rosen H. (1979); MacRae C. and Turner M. (1981); Cronin F. (1983); Goodman A. and Kawai M. (1986))

Reid (1962) identifies that it is not appropriate to use the current income from cross-sectional data to explain long term consumption-asset decisions. The followers believe that permanent income elasticities would be higher than the current income elasticities as the price elasticities show similar results. (Smith *et al.,* 1988; Chou and Shih, 1995; Hansen *et al.,* 1996). It is concluded that the demand for housing is more responsive to long term expected income than the current income. Moreover, the use of measured income does not yield consistent estimates. (Lee, 1968)

Permanent income is more appropriate for measuring the housing demand. But the current income is still used by economists in various studies as sometimes it is difficult to interpret the permanent income (Fu, 2000). Examples include Muth (1960), Reid (1962), Lee (1968) and De Leeuw (1971). One error pointed out by Mayo(1981) states that the estimation on housing demand would be upward-biased which is analyzed by Lee and Chang(1977).

Apart from the income elasticity, the consistency of the effect of income on demand on housing is challenged by Pozdena (1988). He points out that income not only influences the ability of a household to afford the continuing cash-flow burdens of housings but also influences the household's perception of its lifetime wealth prospects.

Although there are lots arguments, income is still a crucial factor affecting the demand on housing. In this dissertation, the household income within the research area is given in table 4.2 and it will be further elaborate in the discussion of the result..

- Price Effect on Housing Demand

Housing demand is determined by price which is a well-known factor discussed by many scholars (Fu, 2000, Pozdena, 1988) Demand, in economic view, is a function between price and quantity which is inversely proportional to each other. Graphically it can be presented in the following.

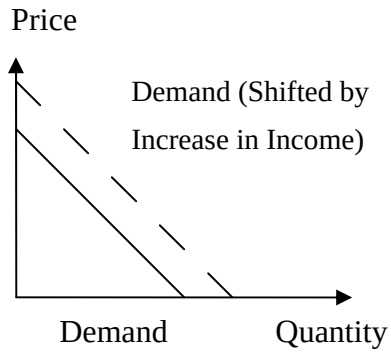


Fig. 2.1 A Demand Diagram
(Source:Pozdena,1988, pp22)

Thus when price of housing falls it will shift the increase in demand, providing other factors remain unchanged.

Apart from the well-known relationship between the price and quantity of housing, more literatures focus on the elasticity of such demand curve. According to Fu (2000), there are two types of price elasticity studies. One treats housing as a composite commodity and the other is in term of housing services which has the relationship to the function approach (Follain *et al,* 1980). No matter which type of studies, hedonic price model is commonly adopted to generate the result. There are still some problems on adapting the model like the findings would identify bias like incorrectly treating the taxation of owner-occupied housing, the net effect of local taxes, the role of expected capital gains and services consumption on housing price. (Fu, 2000) Thus, the results from those scholars have to be improved by further studies.

The importance of elasticity of demand is that this it can be used to determine the volatility of the housing market. Housing elasticity is low if the calculated result is less than 1[1] (Pozdena, 1988). Thus, price factor would affect the housing demand in certain extent.

[1] Please refer to Table 2.1 Estimates of Price and Income Elasticity of the Demand for Housing

- Socio-demographic variables

Apart from income and price, the housing demand is affected by social factors. House is expensive goods. The demand from the market should come from people who are able to afford the rental price or mortgage.

The most widely used variables are the size of the household (Follain *et al.*, 1980; Wilkinson, 1973; Chou and Shih, 1994). Another variable is the age of the head in the household. (Wilkinson, 1973; Lee, 1968; Jimenez and Keare, 1984) As Fu (2000) pointed out that an indirect method have to be used as to attempt to take account of other unknown effects. However, unlike the income variable, there is little agreement on the methodology on analysis such factor. (Mayo, 1981)

Fu (2000) states that a proper accounting for sociodemographic effect is important to understand housing consumption behaviour. He points out that it is also useful for constructing policies that are sensitive to ethnic differences of different demographic groups. Thus, his research addresses that the literatures produced were too theoretical and empirical. As this dissertation is on a study on housing policy, socio-demographic variables should be considered.

2.1.4. Supply of Housing

In the theory of “Supply and Demand”, apart from the demand, supply would affect the level of housing required. Pozdena (1988) raises the issue that the “housing supply process” is not easy to depict. His view on housing supply is based on some observations with the quantity of new house built each year. He also raises another view that supply can be derived as the quantity of standard housing in a particular time.

Barker (2005) studies the property data in England from 1991 to 2001 and concludes that when the supply is less than 1% of the stock, the expectation of rent increases 0.1% more quickly per year than the equilibrium housing price.

Apart from the market force, the government's contribution in housing supply also affects the housing market. Dipasquale (1999) studies the United States "Experimental Housing Allowance Program (EHAP) Supply Experiment" in 1970s. He examines the response of suppliers to tenant subsidies. Murray (1983) uses Dipasquale's data and finds out that subsidizing developers producing rental housing for moderate-income households tends to displace private construction and as a result generates no increase in the housing stock. To summarize, government's intervention in the housing market will decrease the supply of housing and it is demonstrated in the middle-class housing in the United States.

2.1.5 Conclusion

Demand and supply definitely affects the housing market. With the demand on middle-class housing, there is a corresponding supply. Governments intervention by providing housing for the middle class would affect the supply and demand of the housing market.

2.2 Literature Review on Housing Policy with the Property Market

2.2.1 Introduction

The property market is an economic body itself. The demand and supply are the crucial factors which govern the market's fluctuation. Apart from the pure economic regulation, government regulation also affects the property market. The government takes the role of controlling all policies within the controlled region and it achieves this by three basic means. One is regulations, the second is taxation or subsidy and the last one is direct provision of relevant goods and services. (Whiteboard, 2003)

In this dissertation, the impact of the Sandwich Class Housing Scheme (SCHS) on the property market will be investigated.

In the following, the relationship between housing policy and the property market will be discussed.

2.2.2 Literatures related to housing policy and economics

There are only few literatures concerning the impact of particular policies on the property market. It is because property market is very volatile and full of uncertainties (Wong *et al*., 1996). UK researchers try to examine positive economic questions relating to housing and the macroeconomy and to changed in income, price and costs (Whitehead, 1974)

Whitehead (2003) raises an issue that although the policies changes throughout the years, there are some fundamental issues that when should the government has to provide public housing. Her viewpoints are listed in Table 2.2 below:

No.	Fundamental issues identified to provide social housing
1	The Government's objective is to provide effective social housing through private provision.
2	The existence of a social sector necessarily implies public ownership
3	The necessity for a large social sector providing below-market rent .The Government of Sweden and Netherlands provide a higher rental house than market.
4	The necessity for having administrative allocation of social housing to ensure that certain groups obtain adequate accommodation. Nowadays some European countries give priority to particular groups, provide tenure neutral assistance, so that social objectives can be achieved across the whole stock (Turner & Whitehead, 1993;Turner et al., 1996; Stephen et al., 2002)
5	Markets cannot provide housing efficiently as long as people have adequate purchasing power.
6	To ensure the priority meets the needs by having economic reasons that housing itself should play a proactive role in income redistribution through supply rather than demand subsides together with administrative allocations.
7	The social governance on providing public housing is more cost-effective than private provision.

Table 2.2 The viewpoint of Whiteboard on the situation providing social housing. (Source: Whiteboard, 2003)

2.2.3 Provision of Government housing policy causing market failure

Housing policy is known as a means to start the market failure not only in UK but across the industrialized world (Charles, 1977; Maclennan, 1982; Whitehead, 1984). Whiteboard (2003) suggests that direct, interactive and intergenerational are three types of externalities generates market failure.

Direct externalities usually relates to health issues in the poor housing. For improving them, a set of regulatory framework should be set like location, density, design, etc. But it may be unaffordable to all and hard to enforce. Thus, government gives the direct provision so as to provide an efficient approach for ensuring compliance. (Burns & Grebler, 1977)

Interactive externalities are the impact on the nearby property when one use or upkeep a particular property. Davis & Whinston (1961) illustrats that if a person paints his property, some of the benefits fall to his neighbour. On the other hand, some of the cost will be brought by them. Social housing tends to internalize such interactive externalities but Whiteboard (2003) argues that it would not be an optimal investment in maintenance and improvement.

Intergenerational externalities rise from both the imperfect financial market and private rates higher than the social discount rate. At a result, the private market will be spectacled by the individuals who emphasize on short-term and consumer-oriented expenditures only. (Hirshleifer, 1970) Social housing therefore is a direct way on generating higher level of investments.

Those discussed are exacerbated by both lack of information and asymmetry information (Macho-Standler & Perez-Castrillo, 1997).

As the customers cannot effectively locate the best investment option with especially in housing market, government interventions are supported by individuals who increase the resources for housing investment. It is because government decisions should be based on risk neutrality. (Arrow & Lind, 1970; Arrow, 1971)

Government policy that leads to a market failure is due to the problem on slow adjustment of housing system. (Whiteboard, 2003). Sudden alternation on supply and demand will generate adverse distributional outcome and will affect the efficient use of resources. In private sector, the rent controls tend to be the

immediate respond but in the longer term the results of that control often generate a greater incentive for social provision and allocation (Quigley, 1998).

To conclude, the government housing policies would cause market failures. Such failures introduce a distortions in housing investment and misdistribution the resources and make it difficult for infividual to address problems of risk and financing.

2.2.4 Housing Policy as a redistribution of resources

Housing is a valuable asset of the government. Housing policy can be regarded as a redistribution of the resources of government for the community. Whitehead (2003) suggests that the strongest political case for the provision of social housing has never been in terms of efficiency, but rather in terms of a direct and effective means of redistribution and ensuring minimum housing standards. She suggests two ways on subsidies; the first one is in the form of income subsidies that increases the capacity to pay but lowering the freedom of choice about what is purchased. The other one is directly providing additional accommodation and to allocate it on the basis of agreed priorities.

Providing such subsidies would cause market failure as the resources distort the market eventually. (Hills et al., 1990; Galster, 1997; Yates and Whitehead, 1998) Thus, in a well-operating market environment, price will directly reflect the resources costs and therefore help to maximize the utility achieved from given housing resources. But the government intervention become inevitable when the market goes to disequilibrium and the capacity to pay can dominate the efficiency benefits. (Whitehead, 2003)

Redistribution is difficult because the level of determination of rents and prices on underlying objectives to help the social determined needs or to reflect the relative valuation or cost of the housing provided (Maclennan, 1986; Kleinman & Whitehead, 1991). For example, provide cheaper and larger housing so those with families can pay for adequate living places. Whitehead (2003) argues that the problems of ensuring distributional as well as efficiency objectives are exacerbated when pricing below market levels generates shortages, so that those excludes have to pay for more for their housing in the market sector.

The concerning of redistribution is that the Sandwich Class Housing Scheme (SCHS) is a government policy. According to Whitehead's (2003) SCHS is not the provision of providing a minimum housing standard to the community. SCHS is assisting another group of citizens to purchase their housing after a process of redistribution.

2.2.5 The governance on housing with property market

The issue on the governance of housing rose in the British government in 1970s'. It dominated the economic discussion of housing policy until the early 1980s'. The theory related to the problem is about the nature of property rights.

In developed countries, the private property rights are well-defined. The rights give an individual the power to use resources according to that individual's best possible advantage. Moreover, the rights allow the resources to be transferred in such way that expected future values are probably capitalized in the price. (Lai & Yu, 2003). Whitehead (2003) suggests that if this is the case then government policy should concentrate on liberalizing markets and improving contractual frameworks.

The problem on social ownership is the ill-defined property rights and incapacity to capitalize either efficiency or inefficiency (Whitehead, 2003).It is due to an inadequately defined interaction between decision makers and those carrying out the policy, generating inefficiencies of team production. Thus, information is imperfect and decisions are based on bounded rationality which makes the outcome do not come as desired. (Holmstrom, 1979, 1982; Macho-Stadlet & Perez-Castrillo, 1997). In particular to inherent problems of agency which are not mediated by market pressures, the problem on information failure will show more obviously. Then, the decision makers use resources to meet their own objectives rather than those of the society or individual owners. As those objectives are on their interest only, it would situated with risk and uncertainty and even the risk would be political (Williamson, 1979). To avoid the risk, the housing policy is usually more paternalistic which does not necessarily reflect either individual or society objectives (Whitehead, 2003).

Despite property rights, the costs of provision tend to be significantly higher under profit maximization. Posner (1972) suggests that the allocation mechanism of the governance of housing will not normally reflect either opportunity cost or value. But the rent seeking behaviour tends further to misallocate resources. It is because the housing market is very complex in nature of which different values affecting each other coherently with different preferences.

In reality, any governance system on housing market is imperfect. We have to analysis the different attributes of the market and regulate particular product to determine the least-cost approach in order to get a full picture in it. Thus, many relevant factors come back to market and cause informational failures. (Whitehead, 2003)

The problem of governance system actually is more fundamental (Whitehead, 2003). Although the administrative failures can be limited by different means, the allocation of the resources finally will be controlled by political expediency as the politicians will keep its interest on controlling the property market with their political interest which lets the resources finally cannot be distributed at a

right place.

2.2.6 Implications of the Housing Policy with Property Market

There are different views on housing policies with the property market. Wong *et al*. (1996) states that policies that increase housing supply to meet the rising demand will help to slowdown housing price growth where making the property market more competitive will not lower the price. They even stress if the government attempts to regulate, it will enhance the competition of the housing market which made the price higher. Therefore, they argues that the government should avoid regulating the property market with arbitrary measures that would erect artificial barriers to entry and reduce the market efficiency (Wong *et al*., 1996)

From the viewpoint of the government, housing is merit goods. The government weights the value to society is higher than for individual members (Whiteboard, 2003). This is based not only the existence of externalities and distributional concerns, but also the interdependence of utilities, which is named as paternalism (Musgrave, 1959) This argument applies mostly on the bottom end of the housing system but it can also be applied more generally if

the accepted social welfare function includes significantly higher housing aspirations. (Hancock, 1991)

The arguments seem to lay on one side only, but actually both economic theory and evidence point to the need for significant housing-specific subsidies to lower income housing to achieve social objectives (Whitehead, 2003). An example is that in a current estimate for England, over one third of newly forming households will require some form of assistance (Holmans, 2001). And the authorities would like to have a comparative advantage for providing a long term provision on subsidized housing. Thus, although the government should not disturbing the market, it should play some role in it.

2.2.7 Conclusion

In this chapter, the government's intervention affecting the property market is presented with different views. All the views suggested that government should not interfere the property market in any means as it would disturb the market efficiency and its own mechanism. Although no intervention is preferred, the government should provide certain assistance to the citizens who do not have enough capital to enter the property market. As the down payment and other

related charges in sales and purchase is as high as 5 – 10% of the total contract sum of the house, not all the people can afford this.

After all, it still remains a question that whether the sandwich class citizens fall within the line of protection and deserve the government resources on home ownership assistance. In the literatures, they did not clearly define the “bottom line for protection”. Thus, it would be hard to determine whether SCHS should be regarded as a social policy like the Home Ownership Scheme and Public Rental Housing or it is a means for government to provide different housing competing with to the private sector. As it cannot be explained in theoretical level, it cannot be concluded that SCHS is a right policy or not to the property market. The impact of the policy on the property market has to be investigated using data analysis.

2.3 Literature Review on Housing Policy Development in Hong Kong

2.3.1 Introduction

In the former part the relationship between the housing policy and the property market have been discussed. As housing policy is one of the means to regulate the economy of the environment, the economic background of such time frame have to be investigate first in order to get a full picture of the rationale of the housing policy at that time. As the SCHS began in 1992, the time frame for discussion is between 1980 and 1998 for easy reference.

2.3.2 Economic condition between 1980 and 1998

In 1980s, Hong Kong entered an inflationary period pulled by demand in origin (Shea, 1989). The economic boom and the speculated stock and property market caused the inflation rate to reach 15.5% in 1980. As the British colonial agreement only last to 1997, the political uncertainty and a lowering demand took the inflation rate dropped to 8.1% in 1984 and even 2.8% in 1986. (Rating and Valuation Department, 1992)

After a depression, with the growth in US economy and the reviving property market, the inflation rate went up of 9% in 1988 and reached 12.9% in 1991 (Rating and Valuation Department, 1992).The increase of inflation was caused by various reasons but to some extent the changing economic structure was an important element.

The Hong Kong economic structure changed from manufacturing to servicing during the 1980s to 1990s, as shown by the number of workforce in such sector. The number of workforce in industrial sector dropped from 990,365 in 1981 to 574,867 in 1996. On the other hand, the tertiary industry like the wholesale, retail, etc. increased from 19.2% in 1981 to 24.9% in 1996. The

most beneficial industry was the finance and insurance, the percentage of workforce increased from 4.8% in 1981 to 13.4% in 1996 (Hong Kong Annual Reports, 1976-1998)

Changing the economy from industrial to services, property market grew rapidly at that time. Chen (1988) states that the dangling housing question and an ever-buoyant property-driven economy preventing Hong Kong from moving further to completely changed to a service industry oriented economy. This viewpoint is agreed by Lee (1999).

2.3.3 The success of Hong Kong Economy

The success of Hong Kong economy can be explained by two schools of thought.

The First one is the natural resource school, which puts the emphasize of the success on the quality of Chinese, a strong work ethic, perseverance and thriftiness (Lethbridge, 1980). The other school is the institutional school, which stresss on the point on free-market economy and the absence of government intervention (Friedman, 1981; Rabushka, 1976; Woronoff, 1980). Although the two schools' theory seem to be round and fully explained, Schiffer (1983) thinks that it is still inadequate and misleanding.

Schiffer (1983) point out that the economic success of Hong Kong comes from the discrete government intervention. He studies the expenditure pattern of local household and found that public housing and the Mainland cheap food supplies lowers the household budget by nearly 25%. Thus, the public housing becomes a source for economic success. This argument is studied by Castells *et al.* (1990). They uses the same methodology to compare the data with other "Asia four little tigers". They show that Hong Kong and Singapore are largely

the result of deliberate intervention by the government. This viewpoint is further supported by Lee (1993) who states that the economic development has a strong relationship to the state intervention in public housing.

With such success in economic environment, the property market, being the most important market from 1980s to 1990s, was being affected and in the following part it would be discussed thoroughly.

2.3.4 Property Market in 1980-1990s

The housing market follows the economic environment. It is explained in the findings of Chou (1997). But still the property market had its own factors.

In the 1980s, the property market did not show any significant increase until 1988. There was uncertainty as the negotiation between the British and China government continued. Many middle-class immigrated to other developed countries. Thus, the property market did not show a significant increase. On the other hand, the non-investment environment produced a reservoir of savings for consumption and investment in later stage (Lee,1999). So it formed a purchasing power for the household to invest in property market in 1990s

which creates a boom.

Secondly, the property market was pushed up by the demand within the territory. In the Long Term Housing Strategy (Housing Authority, 1987), there was an estimation of 550,000 household formed and 960,000 household units was required in a forecast to 2001 at that time. The figure was suggested to be under-estimated by Lee (1999) that it did not count for the cross-border marriage which required additional demand for housing in Hong Kong. (South China Morning Post, 1999) The demand was actually insignificant as most of them went to the public housing eventually.

Thirdly, the property market was overheated by investment motivation and speculative activities. From the figure of Rating and Valuation Department (1998), the rental and house price indices were nearly the same within 1980 to 1990. This implied that a rational consumer would have a natural tendency to buy rather than rent a property as the cost was nearly the same. (Lee, 1999) But in 1991 onwards, the housing price indices raised far more than the rental indices. With the normal economic explanation, the tenure neutrality would shift to renting rather than buying. But the objective figure showed that it was

not the case. So, the only explanation was that the market was overheated by investment and speculation. The property market kept on increasing until the Asia-financial crisis appeared in 1998.

2.3.5 Government Policy Intervention in the Housing Market

In the 1980s, the government of Hong Kong did not put much regulations and restrictions on the property market. With a payment of relative taxes and stamp duties, a sales and purchase agreement controls the real estate activities of the market. As at that time, the future of Hong Kong was not clear and still had many worries especially in the middle-class citizens in Hong Kong.

The property market boomed from 1991. The housing price rose sharply. Lee (1999) suggests that the end of Gulf War and the starting of the construction of new Hong Kong International Airport are the causes. At that time, the property market doubled within the first half in 1992. (Rating and Valuation Department, 1998)

The property market continued to rise and the government policy shifted to cool down the market. The government rolled out a set of policies controlling

the sales and purchase of property in August 1994. This policy finally became a report called ‘Report of the Task Force on Land Supply and Property Prices’ (Planning, Environment and Land Branch, 1994). It terminated the non-intervention policy of the government to the property market. In the report, the major policies included:

1. Levying the tax on sales and purchases of flats under construction
2. Increasing initial deposit from 1.5% to 10% of the purchase price
3. Setting the mortgage ceiling at 70% of the price of domestic dwellings
4. Replacing queuing by computer randomization as a method of allocation of new f lats to prevent organized gangsters from using illegal means to control queues
5. Limiting the number of new flats that might be reserved by developers for internal sales (e.g. purchase by staff members)

(Source: Lee, 1999)

After the government introduced such policies, the property market showed a slightly decrease for six months. But it ran up quickly afterwards as the sales control was not efficient to control the market (Lee, 1999). On the other hand, the 70% mortgage policy, being a high barrier, hindered the first-time buyers entering the property market. The government had put in the efforts to regulate the property market but the result was questionable.

2.3.6 Housing policy research in Hong Kong

There are many research on public housing policy. Lee (1999) suggests two reasons. The first one is the availability of data in government which make it easier to conduct the research. The second reason is that the studies are largely dominated by state sector analysis to the extent that the owner-occupier sector is considered relatively unimportant in policy focus.

The housing policy research started from a third world urbanization approach to social policy approach. Each time frame would have its own objectives and views on housing policies.

- Housing Policy research in Third World Urbanization Approach

The starting of this approach is given by McGee (1971). He is a geographer and he argues that the underdevelopment in the third world[2] is due to the persistence of a labour intensive traditional economic system. Although its argument on urban planning is critiqued by others, other students of urban geography reflected the same ideological underpinnings of him. Those underpinnings are used to explain the successfulness of the Public Rental Housing programme (Dwyer, 1971; Pryor, 1973; Drakakis-Smith, 1971, 1979; Wong, 1976; Fong & Yeh, 1984). They use three arguments to support the usefulness of the government to intervene the housing market.

The first argument is given by Fong (1986) that such policy is an inevitable response from the government that the private sector cannot withstand the demand from the huge influx of China immigrants. The second argument is given by Drakakis-Smith (1979) that the clearance of slum could free out the land for the developers interest on the demand for industrial lands. In turn, Nientied & Jan van der Linden (1985) and Gugler (1988) criticize the arguments that they only touch on the social appearance of the public housing

[2] He treated Hong Kong was undeveloped in 1960s

policy in Hong Kong but not the social reality. The third argument is in a neo-Marxist approach that policy is a product for the need of the state to reproduce labour power for the capitalist economic system. But this argument is critiqued by Smart (1989) that even without such policies helping the poor, the squatting would generate labour power to some extent.

- Housing Policy research in Political Economy Approach

As policy itself is a political product, the political environment will affect the housing policy. Apart from utilizing theoretical tools from contemporary debates in state theories (Skocpol, 1985; Evans, 1987; Offe, 1984), scholars use such theories to analyze the role of Hong Kong government in public housing policy. (Law, 1988; Smart, 1989; Ho, 1990). The concern is the relative autonomy of the state which explains the heavy involvement of government policy in public housing since 1954 in Hong Kong.

The government's housing policy should bare a degree of political concern. Law (1988) argues that Hong Kong is changing from the colonial state to a capitalist state and autonomy is a must for survival. Miner (1986) agrees that Hong Kong government senior officials could efficiently separate the politics from administration so that an efficient framework on administrative and high degree of governance could be established. Smart (1986) argues that even Hong Kong's housing policy can enjoy such freedom in politics, it could still be affected. His argument is based on the squatter clearance in 1950s. He judges that if the government did it badly, people would admire more on the newly formed Communist China which would cause political dangerous to the British

governed colony.

Ho (1990) does not totally agree with Smart's argument. He finds out that the autonomous role of government in housing policy is checked by declining economy in 1970s. He states that the government preserves the resources in housing in order to accumulate capital. Thus, the autonomy of government in housing policy is based on different political and economic situations relative to time but not solely governed by one factor.

The role of government in housing is more elaborated by recent researchers. La Grange and Lee (1999) use the analysis from Asian Economic Crisis to conclude that government has to take a more monitoring process on property market. Therefore, government housing policy and land supply are agents interventing the market in order to stabilize prices.

- Housing Policy research in Social Policy Approach

As housing is a means on providing welfare to the society, housing policy is examined as a social policy in pervious literatures especially in rent control and allocation processes (Nevitt, 1968; Donnison, 1967; Townsend, 1979; Cullingworth, 1963). Many researches focus on the distribution of resources. But the main concern of those researches is not based in Hong Kong. Hopkins (1969) starts a research on the distribution of resources on housing programme. He suggests that the government's policy should not only focus on the resettling from squatter areas but also the improvement of housing quality in urban district. This argument is agreed by Keung (1985).

The government launched a Ten Year Public Housing Programme in 1974 which attracted research as on social policy. That policy failed as it could not reach the target at that time. Chan (1982) argues that the housing for lower class should be treated as an integral part in social welfare system. Yu & Li (1990) find out that Hong Kong's housing benefits amongst the population is not equitable. There is evidence of a redistribution of income from rich to the poor. Lau (1984) also suggests that the housing policy should be considered as a social policy as it could improve the funding of the Housing Authority to

provide more new houses for the poor.

2.3.7 Conclusion

In this chapter, the housing policy of Hong Kong from 1980s to 1990s is discussed. Hong Kong succeeds with the helps from the perseverance Hong Kong citizen and the discrete government intervention. In 1990, the property market was overheated by investments and speculations which forced the government to insert different measures to cool down the property market (Planning, Environment and Land Branch, 1994). The policy brought a short cool down only. Finally the bubble bursted causing the property market to drop sharply.

The Governor of Hong Kong (1992) introduced the SCHS to the overheated property market. The policy interfered the property market at that time. Before that there were only Public Rental Housing and Home Ownership Scheme provided as means to help the citizen.

Researches on housing policy in Hong Kong changed from a third world urbanization approach to political and social approaches. There are many factors affecting the decision of housing policies and the political and social powers should not be neglected.

2.4 The Development of the Sandwich Class Subsidy in Hong Kong

2.4.1 Introduction

In Hong Kong, for the poorest class, the government provides cheap public housing in housing estates built by Housing Authority and Housing Society. This public rental housing programme (PRH) began in 1953 and there were 31% of the population living there in 2004 (Information Service Department, 2005). Apart from PRH, Hong Kong government also provides subsidized sale flats to the more affordable household since 1978. That programme is called the Home Ownership Scheme (HOS) which settled 18% of the population in Hong Kong in 2004. (Information Service Department, 2005)

2.4.2 Problems on home ownership for sandwich class in early 1990s.

Apart from the economic growth, the property market raised a lot which let the middle class citizens could not easily find a property for home ownership. The reasons can be summarized as:

1. Rising of Middle income households
2. Rising in Property price
3. High Interest rate for mortgage
4. Affordability index
5. Lack of government support

1. Rising of Middle income households

Middle income household increased a lot from the year of 1981 to 1996. In table 2.3, a longitudinal increase in middle groups of the population over the last two decades is clearly shown.

	1981		1986		1991		1996	
	No	%	No	%	No	%	No	%
A	442503	18.7%	165219	6.4%	91184	3.4%	31447	1.0%
B	1170899	49.6%	564612	21.8%	91431	3.4%	26154	0.9%
C	587968	24.8%	1248648	48.1%	557366	20.8%	242429	8.0%
D	94637	4.0%	336662	13.0%	794962	29.6%	316331	10.5%
E	25638	1.1%	113535	4.4%	461003	17.2%	478408	15.9%
F	12950	0.5%	55332	2.1%	221526	8.3%	476114	15.8%
G	18164	0.8%	57075	2.2%	242996	9.1%	668722	22.2%
H	5456	0.2%	21240	0.8%	84154	3.1%	295968	9.8%
I	8263	0.3%	31860	1.2%	136961	5.1%	480891	15.9%
	2366478	100.0%	2594183	100.0%	2681583	100.0%	3016464	100.0%

*Income Group A<=$1000 B=$1000-$1999 C=$2000-$3999
D=$4000-$5999 E=$6000-$7999 F=$8000-$9999
G=$10000-$14999 H=$15000-$19999 I>=$20000

Table 2.3 Monthly Income from Main Employment of the Labour Force.
(Source: Census and Statistics Department, *Hong Kong 1991 Population Census Summary Results,* Census and Statistics Department, *Hong Kong 1996 Population By-Census Summary Results)*

As shown in Table 2.3, the income of the workforce increased quickly throughout from 1981-1996. The highest group of labour force, i.e. group H and I, increased from 0.5% in 1981 to 8.2% in 1991. This significant increase

suggests that the demand for a better housing also increased.

2. Rising in Property price

The price on the property raised a lot which increase the burden for the middle class to obtain their own flats in the private sector. This can be shown in table 2.4. More detailed is enclosed in Appendix 5.

Private Domestic (Supply, Take up and Vacancy)

Small Units

Year	1987	1988	1989	1990	1991	1992
Supply (no. of Units)	34400	34500	36500	27400	33400	26220
Take Up (no. of Units)	35100	33900	23700	29650	23350	22680
Vacancy (no. of Units)	22300	20200	30300	22550	33000	34070
%*	3.4%	2.9%	4.2%	3.2%	4.2%	4.2%

* Vacancy at the end of the year, expressed as a % of total stock

Table 2.4 The Private Domestic Housing Supply and Vacancy Rate from 1987 to 1992
(Source: Rating and Valuation Department, *Hong Kong Property Review (various issues)*)

The difficulty on finding a flat in early 1990s is in table 2.4. The supply of the private sector remained at a low level of around 30000-35000. In the year 1987 and 1990, the number of taking up the units was higher than the supply. The new supply to the property market could not meet the demand for housing which caused the vacancy rate stayed at a low level of below 5%.

The price of property raised a lot because of the non-balancing of supply and demand. For instance, the trend of the average price of domestic units in New Territories is shown in figure 2.2.

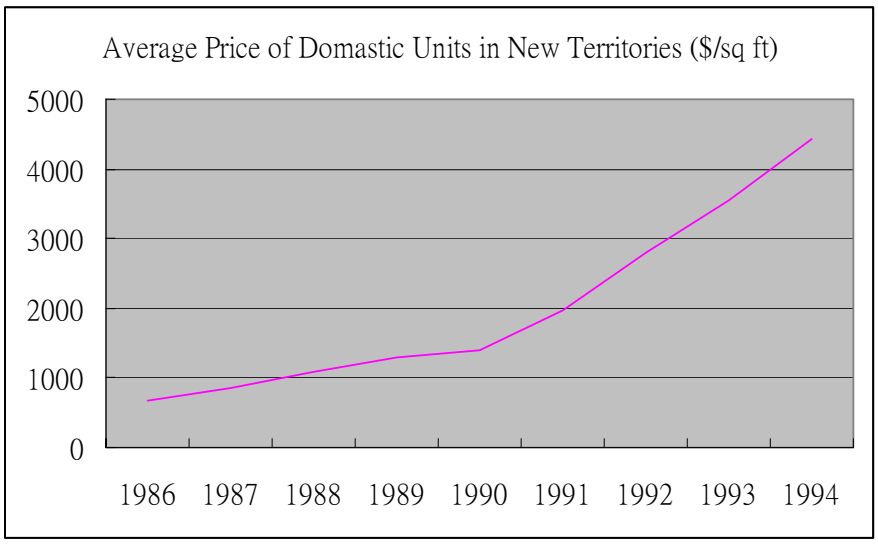


Figure 2.2 The Average Price of Domestic Units in New Territories from 1986 to 1994 (The detailed table of this data is in Appendix 6)
(Source: Rating and Valuation Department, *Hong Kong Property Review (various issues)*

The drastic increasing trend of property price did not stop in 1990. The property price raised at a rate of 25% to 42% per year after 1990. The increase in property price made the middle class not able to afford purchasing a property.

3. High Interest rate for mortgage

Buying a property is a high capital investment. In Hong Kong, due to the linkage between Hong Kong dollar and US dollar, the interest rate is fluctuated with the American's economy but not with the Hong Kong local economy. The interest rate of a mortgage will determine the monthly payment to the bank. The annual fluctuation of the best lending interest rate in Hong Kong is shown in table 2.5.

Best Lending Rate Year	1987	1988	1989	1990	1991	1992	1993
% per annum (Period average figures)	6.60%	7.90%	10.54%	10.46%	9.41%	7.32%	6.50%

Best lending rate refers to the rate quoted by the Hong Kong and Shanghai Banking Corporation Limited

Table 2.5 The fluctuation of the best lending interest rate in Hong Kong from 1987 to 1993
(Source: Census and Statistics Department, *Annual Digest of Statistics (various issues)*)

The mortgage interest rate in Hong Kong usually fluctuates with the interest rate. From table 2.5, the lending interest rate raised up to 10.54% in 1989. Although different banks issues different concessionary terms to attract customers, the mortgage rate would nearly the same as the best lending rate. Such high interest rate affected the intention for the potential purchaser to enter the property market on their home ownership.

4. Affordability index

To give a clearer picture about the affordability of the purchasers, a housing affordability ratio is developed by Renaud (1989) and Wright (1998). They use the price-income ratio basing on the ratio between median house price and median annual income as the method to calculate the affordability. Higher the ratio, the problem on affordability to purchasing a flat is more significant. Lee (1999) calculated the affordability index which never falls below 6 in Hong Kong. It means that purchasers have difficulties to afford their properties. Lee (1999) compares the result to the other parts of the world and it shows that Hong Kong scores the highest index in the world.

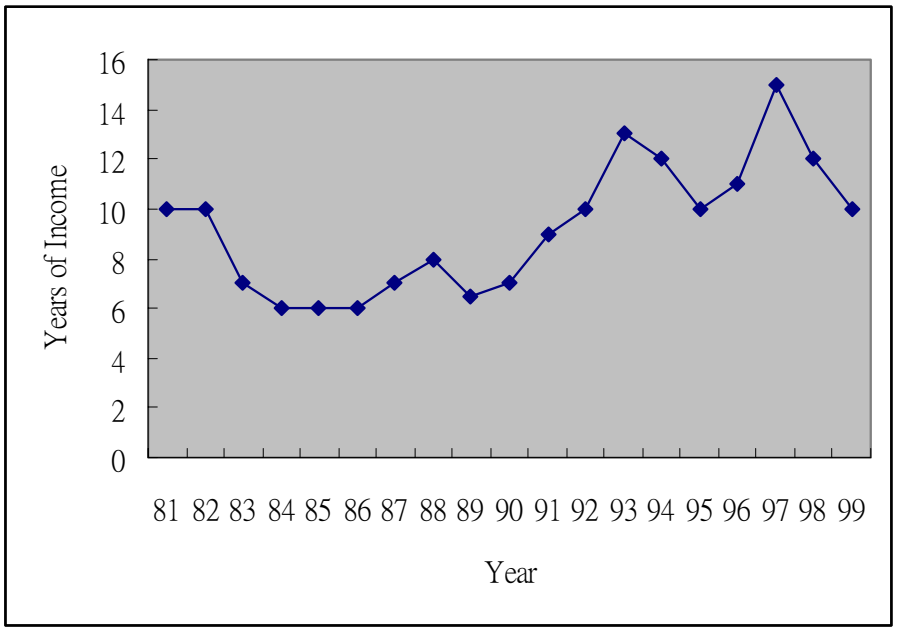


Figure 2.3 Housing Affordability in Hong Kong
(Source: Lee (1999),
Rating and Valuation Department, *Property Review, 1998,*
Census and Statistics Department, *General Household Survey.*)

Country	Year	Affordability Ratio (Price-income Ratio)
Australia	1988	4.0
Canada	1986	4.8
France	1982	2.8
Germany	1988	3.8
United Kingdom	1988	3.7
	1995	4.5
United States	1988	2.8
	1996	3.0
Hong Kong	1988	6.0
	1997	15.0

Table 2.6 Housing Affordability Ratio – An International Comparison
(Source: Lee (1999), Renaud (1989), Wright (1998))

5. Lack of government support

In 1990, the limit of household income for applying HOS flats was set at $11,500 per month. (Housing Authority, 1990).During the boom of property market, there was a group of citizen that exceeded the income limit for buying HOS flats but they were not able to purchase private flats. There were no additional policies helping such group of citizens at that time.

2.4.3 Arise of Sandwich Class Housing Subsidy

During 1988-1991, housing policies focused on the squatter housing and the supply of housing only. The concern to the middle-class was neglected. (Governor of Hong Kong, 1988-1991)

In 1990, the Hong Kong Housing Authority formed an *ad hoc* committee to investigate the housing demand of the 'Sandwich' class citizens. (Government Information Service, 1990). Based on the result of the committee, the Hong Kong Government promised to build 10,000 residential units for the 'Sandwich' in 1992 (Housing Society, 1994). In the policy address, it was written as follows (Governor of Hong Kong, 1992)

> *"There is one group in our community whose housing problems cause me particular concern. These are the "sandwich class" families who face special difficulty in realising their ambition to buy their own home. They are above the income limits for public housing but are still unable to afford a flat on the private market. No young family should have to endure the uncertainty and disruption which speculation can create. They should not have to spend half their lives searching for a place they can call their own. I share Members' views that this burden must be eased."*

The scheme was divided into short term and long term programme and it was handled by the Hong Kong Housing Society (HKHS).

The subsidy programme was called “Sandwich Class Housing Scheme” (SCHS). The target is to help the families with monthly income between $20,001 and $40,000 initially. The limit was revised[3] annually. The aim of the programme was to help the ‘sandwich’ class which fills up the gap between the HOS and private housing. Therefore, the occupiers of public rental housing, HOS housing and the private housing was not allowed to enter the SCHS at first. At the final stage of the scheme, the policy shifted and it attracted the PRH occupiers and single person joining the scheme.

Under the short term scheme, a low-interest loan fund of $2.7 billion was set up to provide beneficiaries with a one-off loan for the a down-payment for a flat. (Government Information Service, 2002). The applicant could get a low interest loan of 20 percent of the sales price of the flat or lower than $500,000. The flat purchased with the loan should under a sales price of $3 million and an age less than 10 years (Housing Society, 1993). The short term scheme

[3] For more details on the revisions of limitations, please refer to appendix 1

finally offered 5701 successful applications. It was terminated in April, 1999 due to the change of the housing policy. People could apply the new Home Starter Loan Scheme and the Home Purchase Loan Scheme. (Information Service Department, 2002)

The long term scheme was the construction of flats for 'sandwich' class citizens. The flats developed were cheaper in price but there was a 5-year resale restriction. Land was granted to HKHS on concessionary terms but HKHS had to bare the construction cost itself (Information Service Department, 2000). There were 10 SCHS housing estates in total which provided 13000 flats to the households (Information Service Department, 2002). This long term scheme reached the end in the Asia Financial Crisis which caused the collapse of the real estate market in Hong Kong. The government considered that the property price in the private sector had dropped to a level which is affordable by the middle-income families. Thus, the main scheme stopped in October, 1998, except for the estates under construction at that time (Tung, 1998, Information Service Department, 2002). This policy was taken in action by the Housing Bureau in the statement of the Policy Objective 1998 which the department stopped any further planning of the SCHS (Housing Bureau,

1998).

2.4.4. Objective and Target of SCHS

The objective of SCHS was to provide housing between the existing Home Ownership Scheme and the private property market (Governor of Hong Kong, 1992).

The target of the long term scheme had been changed from time to time. Initially, 10,000 units were targeted to be built. In later years, the target was revised to providing 16 sites in total and providing 20,000 flats. It was even revised to 30,000 in October 1995 (Government Information Service, 1996; Housing Bureau, 1997). Finally in 1998, the Housing Bureau (1998) following Chief Executive's policy address (Tung, 1998) suspended the SCHS.

2.4.5 Related development with SCHS

There were 3 SCHS estates under construction in 1998, and the construction continued. In December 1999, the Hong Kong Housing Society decided to pay the land premium for the newly-finished SCHS estates so as to convert it into private housing estates. The negotiation with Housing Bureau started in 1999 and finished in 2000 (Mingpao, 1999) Hong Kong Housing Society finally paid the other half of the land premium to convert it into private housing estates.[4] Thus, all the SCHS housing had been sold and there is no further SCHS flats in Hong Kong.

[4] The price for the Land Premium paid for each estate can be shown in appendix

2.4.6 Conclusion

The SCHS was designed for the household which cannot apply for the HOS and not able to afford the high property price in private market. The scheme was revised and the target and limitation on application was changed in different periods. Finally the scheme was terminated due to the significant downturn in property market after the Asia financial crisis and a wrong provision of housing supply by Hong Kong SAR government in 1997.

After the announcement of the termination of SCHS in 1998, there were 3 SCHS housing estate under construction. They were changed to private housings after paying the land premium to the government. The final sale of about 200 units begins in 2006 the scheme finally comes to the end (Housing Society, 2006)

2.5 Effect on Subsided Housing to Neighborhood Property Markets

2.5.1 SCHS – subsidized housing or not

As SCHS is subsided by the government on a concessionary terms in form of land price discount, it can be regarded as a subsidized estate as the HOS. The target group of SCHS was those family with an income higher than those in the HOS.

The SCHS flats are in the form of subsidized housing because the flats are not allowed for resale within 5 years and the price of the flats is at a discounted price due to the land value discount. The income level, educational level, etc of the household in SCHS estates are different from those in the HOS as the minimum requirement of applying for SCHS estates are higher.

2.5.2 Why the subsidized housing affecting the nearby property image

Li (2005) states that the negative effects of subsidized housing estates on the nearby private developments were mainly based on psychological but not physical or tangible factors. The subsidized housings do not produce a direct and tangible physical damage to the nearby private housing estates which do not like the industrial buildings emitting toxic gases that can be measured easily and objectively. The subsidized housing estates settled the lower class citizens who were infamously associated with the ghettos. People living in a higher class property would not be pleased to see so many lower class citizens.

Lance and Hilary (2002) explain that the subsidized housing may be expected to have a differential effect on surrounding private housing estates. They give an example that if the subsidized housing estate is the same type as the private housing estate, there is no reason to suspect such a differential impact physically. Thus, even the same type of housing is provided to subsidized housing, the effect would still be there as such housing is targeted to lower income citizens. It makes the subsidized housing different from other private ones which is a fundamental and unchangeable view to those living in the

private housing estates that those people living in the subsidized housing estates are poor and have a poor cultural and educational standard. With such viewpoint, Lance and Hilary (2002) pointed out that those are the main sources of negative impressions on the private housing estates which are next to the subsidized housing.

The psychological effect on the negative image on subsidized housing is also discussed in other literatures. Williamson (1974) points out an example in public imagination that low-income households are stigmatized. It is because the Aid to Families with Dependent Children programme with the Temporary Assistance for Needy Families programme illustrate that the poor has to face time limits and usually forced to work in exchange for benefits. The assumption behind the programme is that the poor prefers to be on the dole and need to be prodded to get off. Thus, the poor was easily treated with a bad image which will affiliate to where they lived.

The owners in private housing concern about their social status. Galster & Killen (1995) suggest that exclusivity is a key determinant of a neighbourhood's perceived status as the place on living influences the

education of lower generations, the types of people that the people interact with and what jobs available at there. Therefore, the neighborhood represents a major component of the opportunity structure for children and adults. As a result, living next to a desirable and exclusive property represents the social status of the one living in the private housing property. On the other hand, living in a subsidized housing district, and particularly associate with some social problems like poor security, did not arise the social status of the one lives in a private property within such district and the effect on such private property would be negative.

Besides, wrong distributions on land use would affect the private properties' price around the subsidized estates. This situation happened frequently in Hong Kong. Li (2005) states that there are many public housing developments located on relatively convenient and high-quality sites. Thus, the private developers, as well as the owners in the private properties, complain after the property market crashed in 1997. It is because they find that the public housing estates occupy so many of good urban centre sites that affect the price in private properties.

Subsidized housing estates normally impose a negative impact on the nearby private housing estates. The negative effects are mainly being psychological rather than physical. The low income and over-representation of owners in the subsidized housings is the main reason for the psychological effects although it is not the case for all the people living within the subsidized housing estates.

2.5.3 How large do the subsidized housing affecting the nearby private properties' value

The owners of the private housing estates are not pleased to see the nearby subsidized housing. Therefore, such effect should be reflected on the property price if the effect is significant.

To illustrate how such subsidized housing affecting the private property price, a simplified three-quality submarket approach suggested by Rothberg and Galster (1991) is used. The general arguments can be extended to any number of quality submarkets which is recommended by Lance and Hilary (2002). The three types of submarkets are the rich, middle class and poor and the household is divided into similar groups as rich, middle class and poor. Rich people lives in a higher quality of housing. By applying the model, Rothberg and Galster (1991) assume that social problems are perceived to be negatively correlated with social class and the subsidized housing typically is occupied by the poor residents which the houses have a middle-class quality. The context-dependent nature of impacts due to subsidized housing apply regardless of the quality of the subsidized housing.

If the subsidized housing is located next to a rich private housing estate, Rothberg & Galster (1991) expect that the most significant impact would occur. They explain the phenomenon from two points of view. Firstly, in rich submarkets, the private house's quality is the best among the three groups but the subsidized housing is the poorest among the three. The subsidized housing was outstanding from the others with a negative impact. Thus a deleterious impact on property values occurs. Secondly, the owners in the subsidized housing have a low social status which is not comparable to the rich households and probably in a different race. Unless the subsidized housing is viewed as part of undeserving poor, the social status would have impact on the property price on the private estates. To conclude, the discrepancy in physical quantities between subsidized housing and rich private housings suggest that a negative impact would be imposed on the luxury houses.

In the medium quality market, the expected impact is not so clear cut that a negative effect should be taken. Providing that the subsidized housing is built at the medium-quality level, the impact of the physical attributes should be neutral. Even there is no physical difference; a perceived impact on the

occupants in the private housing estate is suggested to be negative by Rothberg & Galster (1991). It is because the occupants in the private housing estate still have a mindset on the people living in the subsidized housing that they are having a different race with them. Thus, although the occupants in the subsidized housing are deemed to be part of the deserving poor, the effect on that would probably be negative with a high degree of uncertainty.

When the subsidized housing is built in the low quality market, Rothberg & Galster (1991) expect that it is hard to draw the conclusion clearly. If the subsidized housing has a middle-quality level, it will have a better quality than the nearby markets. Then a positive impact is expected to the nearby property market as the subsidized housing improves the situation of the property market. However, the impacts on the owners of the low quality housing properties are unclear. It is because whether the presence of such similar social status people will have an adversely effect on surrounding environment is not clear. On the other hand, the poor in the nearby properties could be receiving other types of public assistance or waiting for development of the district which gives them a resettlement for improving their lives. Thus, the effect in this situation still remains blurred. Rothberg & Galster (1991) can only concluded that the

physical characteristic of subsidized housing in the low-quality market could have a positive impact on the property value.

2.5.4 Conclusion

The impact of subsidized housing on the nearby property market would be determined by the quality of the property market itself, whether it is a rich, middle-quality or low quality housing. One assumption raised by Lance & Hilary (2002) is that the buyers and sellers in the housing market will have the information about the presence of the subsidized housing in the neighbourhood. They suggest that it would be a point easily forgot by the researchers as the subsidized housings in America can be easily distinguished. In Hong Kong, the subsidized housing estate has a standard format so that the same assumption is also true. But for the SCHS estates, the design is comparable to the private housing in order to attract the middle class to buy such properties. They cannot be easily distinguished from private development. But in this research, it is assumed that all buyers and sellers notice the fact that there is an alterative choice of SCHS near to the private property.

Chapter 3 - Hypothesis

From the literature view, the following hypothesis is established:

'The Sandwich Class Housing Scheme (SCHS) has a negative effect to the nearby properties'

SCHS provides housing with similar quality to the nearby private housing. So the housing supply to the market would definitely increase. In order to compete for the SCHS, the price of the nearby private housing will decrease.

The housing policy is known as a means to generate market failure not only in the UK but across the industrialized world (Charles, 1977; Maclennan, 1982; Whitehead, 1984). SCHS is a housing policy on granting lands to the Housing Society with a concessionary term. The literatures suggest that housing policy the property market will cause market failure which affects the property price.

Subsidized housing estates normally impose a negative impact on the nearby private housing estates where the negative effects were mainly being

psychological rather than physical (Li 2005). Although SCHS's owners are not as poor as those in subsidized housing, there will still be a negative impact affecting the nearby property prices.

In order to verify the result, Hedonic Price Model will be applied to test the validity of the hypothesis.

Chapter 4 - Methodology

4.1 Introduction

To investigate the impact of the SCHS to the nearby property market, the property price is a useful indicator to reflect the value of individual properties. If the property market is affected by any factors, the effect will be reflected on the property price. Moreover, the supply and demand theory also provides a literature background on the relationship between property price and quantity. Therefore, using property price to measure the impact on the property market is used in this research.

In previous researches about the impact of subsidized housing on the nearby private properties, Rohe & Freeman (2001) use a comparative study on measuring the outcome such as crime and property values with such outcomes in the similar neighbourhood that does not have subsidized housing. But this approach is criticized by Lance & Hilary (2002) that the uneven distribution of subsidized housing would make the methodology not concise enough for isolating the effects.

For other researchers, a regression model is commonly adopted to find out the impact of the subsidized housing on the nearby property market. For a regression model, a statistically significant and substantively large coefficient for the subsidized housing indicators would suggest the impacts of the presence of subsidized housing on the outcome variable of interest in a particular area. In the property value literature, regression model is known as the hedonic price model. For hedonic price, the price of housing can be partitioned into the various physical and environment characteristics of a unit, including the presence of subsidizing housing.

4.2 Hedonic Price Model

Hedonic price analysis is applied by Court (1939) and Griliches (1961) originally on investigating the automobile market. Furthermore, the use of such model is extended to goods of which the price would be affected by different (Goodman, 1989). Rosen's (1974) defines hedonic price as:

> *"Hedonic prices are defined as the implicit prices of attributes and are revealed to economic agents from observed price of differentiated products and the specific amounts of characteristics associated with them" (Rosen, 1974)*

Hedonic price model is a specific form of regression on breaking down the price with different contributing factors in order to establish an all-round picture. The coefficients triggered from the hedonic price model are interpreted as the shadow price of these characteristics which indicated the implicit valuation of them. Housing is a common example on applying such hedonic price model as the property price is not affected by a single factor, but by different factors like the age, floor level and sizes. (Heikkila, et al., 1989)

4.3 Previous Research on Hedonic Price Model with Similar Topics

Hedonic Price Model is commonly used by the researchers to find out the impact of the subsidized housing on the nearby private property price.

Lee *et al.* (1999) examine the impacts of Federal Housing Administration housing, LIHTC housing, Section 8 New Construction and public housing on the sale price in Philadelphia, the US. A hedonic regression is employed with indicator variables for the presence of different housing as independent variables. Lance & Hilary (2002) agree that the model reasonably captures the relevant characteristic of other variables in the property values by controlling the factors on the high-rise buildings. The result of Lee *et al.* (1999) shows that home ownership subsidized housing has a positive impact on the property value but the development-based public housing estate has a negative impact on the property value. And the main conclusion from Lee *et al.* (1999) is that different impacts are resulted from different types of subsidized housing.

Besides Lee *et al.* (1999), other researchers use other models which confined to single neighbourhoods to eliminating the need to stratify their analyses by quality niches. Guy *et al*. (1985) use the hedonic price model to find out the impact on the below-market interest rate development with the sales prices of the nearby middle-income town homes in San Francisco. They find that the result is negative which indicates that the below-market interest rate development creats a negative impact to the nearby developments. Cummmings & landis (1993) analyze the data in San Francisco again with a revised model from Guy *et al.* (1985) on implementing the locational characteristic and a similar result is obtained.

Lyons & Loveridge (1993) look at the impact on the presence of federally subsidized housing on the assessed value of residential properties in Ramsey County, Minnesota. In their model, the impacts on the urban cities and are investigated separately for a better formulation on the model. Lyons & Loveridges' (1993) find that "a small, statically significant [negative] effect associated with the presence of subsidized housing units in a neighbourhood." They conclude that the presence and the number of subsidized housing is an important factor to the nearby property value.

In Hong Kong, a similar research has been done by Li (2005). He tries to find out how the private property price would be affected by the nearby subsidized housing. He chooses the development in Kornhill, Lei King Wan, Telford Garden and Laguna City located in Hong Kong Island and Kowloon districts for his investigation. He also uses the hedonic price model for his analysis. The result shows that proximity to a public housing project is a negative factor on private housing prices in the neighbourhood. His result also reflects that the location between the different blocks within the estate and the subsidized housing does not implied a premium to the housing blocks further away from the subsidized housing. That means the location of different blocks within the estate is not significant to the overall results.

After those scholars' findings, other researchers used different variables and places to verify the result of pervious works. Lance & Hilary (2002) analyze the findings of researches in America and find that six of the researches have a negative result while five have a positive result. The pattern of mixed findings reflected the pattern of the ad hoc approaches on this route on research. This explains the result of mixed findings that most of the studies do not find an impact.

The presence of subsidized housing will affect the nearby property value, but it can either positive or negative depending on the theory applied. Lance & Hilary (2002) also suggest that the manner in which the presence of subsidized housing affecting property values is context dependent.

From previous researches, there is no clear solution on whether the subsidized housing will affect the property price. The impacts of subsidize housing on the property value still remain uncertain in current literatures. SCHS is a kind of subsidized housing which the status of the owners between the SCHS and the private housing is similar and they are living in the same district. This characteristic is different from pervious researches and this area had not been studied.

4.4 Formulating of Hedonic Price Model

4.4.1 Hedonic Functions

In Rosen (1974), the hedonic price is a breakdown of different attributes of contribution on the selling price. Statistically, it can be described in the following function:

$$H = (h_1 , h_2 , \ldots . h_k) \quad \ldots (1)$$

Function H represents the price of housing and h_1 , h_2 , …. h_k represent a bundle of attributes. The hedonic price model link the above two together to make a functional relationship between the observed property price in market, given to P(H), where H stand for the level of characteristics contained in vectors. Thus, equation (1) changes to:

$$P(H) = f (h_1 , h_2 , \ldots . h_k) \quad \ldots (2)$$

The price of any attributes, K, contained in H is referred to as the implicit price of the attribute. It is shown as the function below:

$$Pk (\delta P (H) / \delta hk) \quad \ldots (3)$$

Inserting proper specific function to the hedonic price function, the estimated

coefficients will provide the estimated marginal prices of the attributes.

4.4.2 Housing Attributes in Hedonic Price Model

The bundles of attributes can be a wide range of data. Bulter (1982) and Ozanne & Malpezzi (1985) point out that the hedonic price model should only include those attributes that "both yield utility to residents and are costly to produce". Bulter (1982) also characterizes the attributes into structural and non-structural ones. The non-structural can be further divided into location and neighbourhood characteristics. Thus, the hedonic price model, on the basis of equation (1), can be rewrite as follows:

$$H = f(S, L, N) \quad \ldots (4)$$

Where, S is Structural Characteristic

L is Locational Characteristic

N is the Neighbourhood Characteristic

- Structural Characteristic

The Structural characteristic is about the attribute of the property itself. As each property has its own design, no properties are exactly the same. Grether *et al.* (1974) demonstrate lots of the structural attributes on his hedonic price model. The varieties include tile baths, volts, fireplace, bathrooms, toilets, number of stories, condition of houses, etc. He uses the data in the United States to show that different combination of attributes on the property prices. Some of the attributes studied by Grether *et al*. (1974) are not applicable in Hong Kong like volts and slate roof, etc. while still some fundamental ones are important in Hong Kong like floor and toilets.

Local researchers like Mok *et al.* (1995) have conducted similar survey to prove the attributes and to demonstrate the truth of such attributes. Furthermore, Chau *et al.* (2001) find out that the goodwill of the developers affects the property price as well.

- Locational Characteristic

The factor on location relates to the location and accessibility of the property. For residential properties, view is regarded as an important consideration when purchasers buy a property in Hong Kong. It is because Hong Kong is surrounded by the sea in many places like Hong Kong Island and the costal line in Kowloon peninsula. The view of Victoria Harbour is regarded as a famous scene throughout the world. Benson *et al.* (1998) investigated different views like ocean, lake and mountain and found that it is an important characteristic.

- Neighbourhood Characteristic

This characteristic is the housing attribute related on the quality and nature of neighbourhood. Poon (1978) finds that railway externalities produce a negative effect on the residential property prices which is mainly because of the air and noise pollution associated by the diesel engines at that time. Brasington (1999) studies the effect of public school quality on the private property price. The result shows that the property price is highly affected by the expenditure per student and student-teacher ratio.

Green environment affects the property associated with it. Correll *et al.* (1997) study the relationship between the distance from the green belt and the property price. They find that the property price will decrease as moving further away from the green belt. Do & Grudnitski (1995) show that the golf course add value to the nearby property price. They explain that the golf course benefits both golfers and non-golfers as the non-golfers can be benefited from a better view provided by the golf course which is natural, unobstructed and attractive golf course landscape. Moreover, the privacy of the properties is increased as it is an open space which without any neighbour flats. The golfers like it as they can play golf near to their properties.

In Hong Kong, where the living environment is packed, there is researches literature on different special neighbourhood attributes. Mok *et al.* (1995) include school zone, big estate and entertainment/sport facilities as the neighbourhood variables in their model. The big estate and sport facilities show a positive effect on the property price next to it.

4.5 Interpretation on statistics associate with the model

The hedonic price model not only shows effects on different attributes but also other relevant information. They are the t-test, coefficient of determination (R^2) and F-statistics. From those statistics, the significance of each variable, the proportion of variation in the dependent variable by the variation in the independent variable and its significance can be shown.

- t-test

The t-test is used to test whether the relationship between the property prices and the independent variables is significant. The t-value is derived from the equations:

$$t = | b - 1 / Sb | \quad \ldots (5)$$

where, b is the coefficient of independent variable derived from the hedonic price model[5]

Sb is the standard error of the coefficient

[5] .b-1 instead of b is used to perform t-test because the null hypothesis is the estimated coefficient of the independent variable being tested is one showing that the volatility of the independent variable is greater than that of the dependent variable. (Lau, 2000)

After having the t-value of each independent variable and the degree of freedom[6], table of "t-distribution" is consulted. The table of "t-distribution" determines the probability on whether the null hypothesis is rejected which the coefficient of the independent variable being tested (α) equals to 1.

The relationship between the property prices and an independent variable can be interpreted from the following equation

$$\text{Significant level} = (1 - \alpha) \times 100\% \quad \text{... (6)} \quad \text{if } |t| \geqq t_{\alpha, df}$$

where, $t_{\alpha, df}$ is the tabulated value in t-table corresponding to α

df is the degree of freedom

After such calculation, we can say that the independent variable's probability equals to zero will be in (some)%. (i.e. significant in 5%), or we can say in another way that it is at 95% confidence level.

[6] The degrees of freedom (df) is the sample size less the sum of 1 and number of dependent variable (k), i.e. [n-(k+1)]. This reflects the loss of (k+1) degrees of freedom in the numerator the results from the estimation of (k+1) parameters. (Lau, 2000)

- Coefficient of determination (R^2)

The fitness of a functional form to the data is determined by R^2 which is the square of the correlation coefficient. It is used to measure the extent of the movement in dependent variable which is explained by the independent variable in a function. The value of R^2 will be automatically calculated by the computer programme when the regression is made. The largest value of R^2 is 1 meaning perfectly fit while the smallest is 0 indicated a completely misfit of data.

- F – statistics

F – statistics is a tool to find out the significant of R^2 mentioned above. A null hypothesis which all coefficients in a function are zero is tested. Providing that this null hypothesis is rejected, that means there are at least one of the coefficient is non-zero which contributes information to the prediction to property prices.

The null hypothesis that all coefficients are zero us rejected at (1 –α) x 100% confidence interval. First look for the following equation:

$$f > F_{\alpha}(v_1, v_2) \quad \ldots (7)$$

where, v_1 is the numerator degrees of freedom[7]

v_2 is the denominator degree of freedom[8]

α is the probability of all coefficient are zero in the function.

From equation 7, $F_{\alpha}(v_1, v_2)$ is the tabulated value in the table of f-distribution at α with two degree of freedom. If the null hypothesis is rejected successfully, it gives extra evidence to show that the result is significant.

[7] Numerator degree of freedom is the number of independent variable in the function (Lau, 2000)

[8] Denominator degree of freedom is the sample size less the total number of variable in the function (Lau, 2000)

4.6 Limitation to hedonic price model

4.6.1 Heterogeneity of Data

The degree of accuracy of the model is affected by using sample units in different markets with different characteristics. Jones & Mock (1984) rectify this problem by classifying their sample units into five categories according to their locations so that the effect can be controlled by the dummy variable.

In this dissertation, the heterogeneity of data is not significant as the area of research focuses on Ma On Shan district only. Moreover, the buildings are packed together in the same place.

4.6.2 Multicollinearity

Multicollinearity arises when two or more independent variables happen to be correlated. Then, the result would be negative after regression. Another common symptom of having multicollinearity is that the adjusted R^2 has a very high value but there are many insignificant coefficients.

Lusht (1997) suggests that the critical issue on real estate analysis should not be focused on multicollinearity because it cannot be avoided. The problem is whether multicollinearity is serious or not. The existence of collinear relationship among the independent variables can be found by applying the correlation matrix.

In the hedonic price model of this research, the number of independent variables is limited and it is carefully considered before putting into the model. Thus, multicollinearity can be minimized.

4.6.3. Functional Form

The functional forms should be carefully considered before putting into the model as they would affect the accuracy of the model. Nonetheless, no literature in present can suggest a perfect model on performing the best regression analysis with particular functional forms added. Some literatures propose the Box-Cox transformation to obtain a better solution but it cannot guarantee that the best solution is achieved.

In terms of simplicity and easy understanding, a simple hedonic price model without special functional form is used in order to get a clear and accurate result from the analysis.

4.7 Area of Study

In this dissertation, the hypothesis will be investigated by comparing private properties in Ma On Shan district with the SCHS housing called Park Belvedere.

There are 5 reasons on choosing Ma On Shan as the area of this study:

1. Simple landscape and distribution
2. Present of private estate type development
3. Comparable design of flats
4. Comparable group of owners
5. Good sales record of Park Belvedere (not much resale)

4.7.1 Simple landscape and distribution

The area of study in Ma On Shan is shown in the figure 4.1

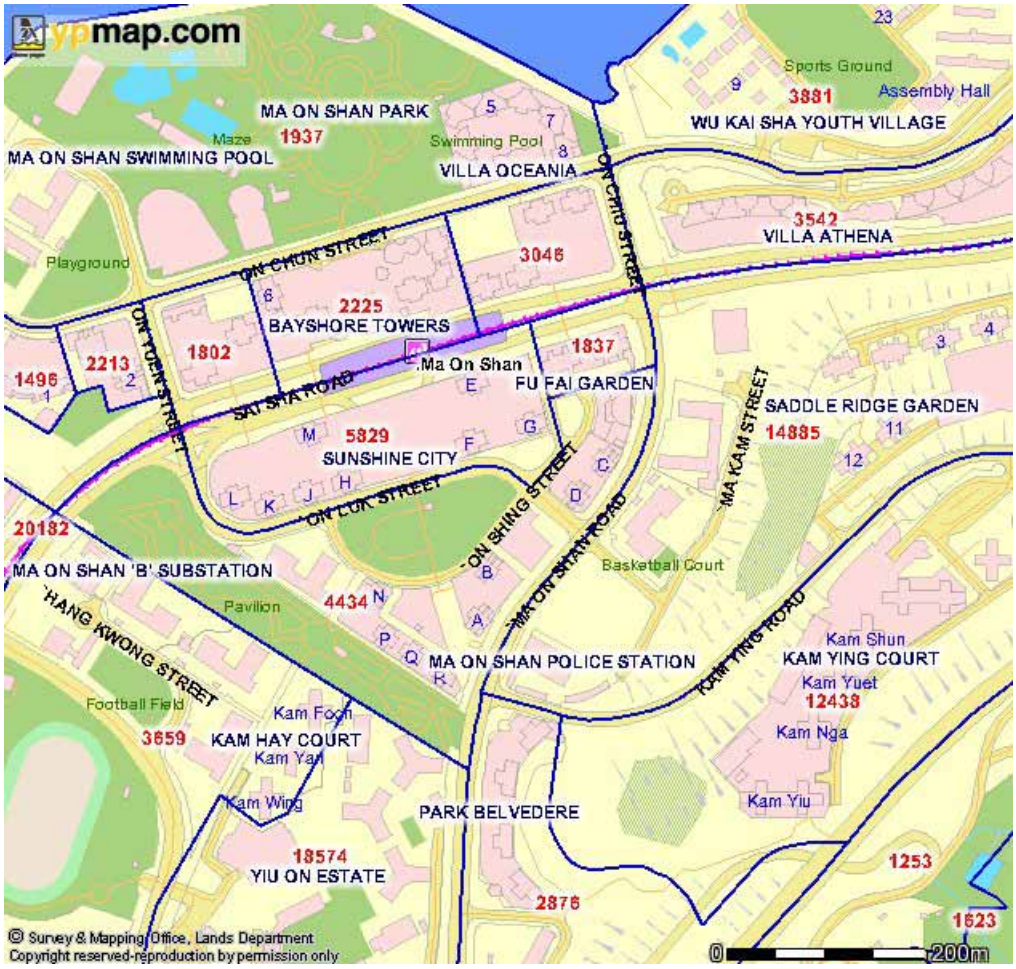


Fig. 4.1 The area of research in this dissertation
(Source: ypmap.com, 2006)

The area of the study is a flat land from the coast to the hillside. This can eliminate the effect of attitude between different estates. For example, the Highland Park located in Kwai Fong is located on the hillside which stands on a higher place than others. So it would not be a good choice for comparable investigation.

Moreover, there are plenty of private housing blocks for the regression analysis. The Bel Air Heights, a SCHS estate in Diamond Hill in Kowloon, only have a Galaxia for investigation which makes the sample size too small. Besides, the distributions of housing blocks are packed within a short distance which can minimize the location factor of particular facilities to specific property block.

4.7.2 Present of private estate type development

In Ma On Shan, the area of study consists of estate type developments. As SCHS housing is an estate type development, single block private development is not a good choice for comparison. Estate type development always has better property management, and clubhouse. Therefore, using the same attribute of private estate type development would be more appropriate. The example of SCHS locating next to the single block development only is the Marina Habitat in Ap Lei Chau and Hibiscus Park in Kwai Fong.

4.7.3 Comparable design of flats

Park Belvedere has a similar design with the other housing blocks in Ma On Shan District. The detailed building plan is shown in Appendix 4. In summary, the specification of the flats between Park Belvedere and other blocks are shown in table 4.1.

Block Name	Flat	Bedroom	Toliet	Baywindow
Park Belvedere	C	3	2	Yes
	A	2	1	Yes
SunShine City Block A	4	3	2	Yes
	1	2	1	Yes
SunShine City Block N	1	3	2	Yes
	2	2	1	Yes
SunShine City Block J	3	3	2	Yes
	6	2	1	Yes
BayShore Towers Block 1	A	3	2	Yes
	B	2	1	Yes
BayShore Towers Block 2	A	3	2	Yes
	B	2	1	Yes
Ma On Shan Centre	D	3	2	Yes
	F	2	1	Yes

Table 4.1 Distribution of Bedrooms, toilets and bay window in Ma On Shan District

In table 4.1, both the large flats and the small flats employed the same standard. Thus, the difference in architectural design can be controlled as it would affect the property price.

4.7.4 Comparable group of owners

The population characteristics within the Ma On Shan District is evenly distributed. This can be demonstrated in the following table:

	Park Belevere	Average on Nearby Private Blocks	Nearby Private Blocks			
			Sunshine City Block A-D, N-R	Sunshine City Block E-M	Bayshore Towers	Ma On Shan Centre
Total Population :	2876	3883.5	4434	5829	2225	3046
Working Population :	1782	2429.75	2880	3631	1467	1741
Median Age(Male) :	35	34.25	34	34	35	34
Median Age(Female) :	32	33	33	32	33	34
No. of Domestic Households :	878	1423	1679	2041	961	1011
Average Domestic Household Size :	3.2	2.65	2.5	2.8	2.3	3
1-Person Domestic Household :	4.90%	21.25%	23.10%	20.40%	27.20%	14.30%
Unextended Nuclear Family :	87.70%	71.63%	77.00%	69.80%	63.10%	76.60%
Age 15+ & Never Married(Male) :	142	310.25	384	407	228	222
Age 15+ & Never Married(Female) :	192	416.5	469	661	251	285
Median Household Income :	$40,500	$36,212.50	$33,250	$38,600	$40,000	$33,000
Median Household Rent :	$6,000	$7,025	$6,500	$6,800	$8,000	$6,800
Proportion of Owner-Occupiers :	97.50%	78.88%	75.00%	79.20%	79.10%	82.20%
Sixth Form & Below(Age 15+) :	1436	2036.5	2502	2902	1083	1659
Tertiary & Above(Age 15+) :	721	1118.75	1260	1692	719	804

Table 4.2 The distribution of population related statistics among Park Belvedere and its nearby private housing blocks.
(Source: Census map of ypmap.com (2006))

In table 4.2, the affordability of Park Belvedere is comparable to its counterparts. Thus, it will not cause a significant preference of purchasing the blocks with advantage on social classification. In another words, their choice will mainly base on the other parameters of the property like seaview but not the social classification problem. This deviation will be more significant in the old district like Bel Air Heights and Cascades.

4.7.5 Good sales record of Park Belvedere (not much resale)

The record of sale in Park Belvedere is better than other SCHS estates. The sale of Park Belvedere was during on the increasing trend of the property market. At that time, people are richer and more affordable to buy property, Sunshine Grove, Highland Park and Cascades were sold at the peak of the property market in 1998. It was difficult for the purchaser unaffordable to pay for the down payment as the property price was too high.

Another good sales record of Park Belvedere is the small number of forfeiture cases reported. In the case of the Pinnacle, another SCHS development, the quality of the building was criticized by the purchasers and many forfeiture cases were reported after inspecting the property. There were a number of

resale cases which would cause multi-affection to the property market as well as the reputation of such SCHS housing estate.

Therefore, due to the above five reasons, Park Belvedere is chosen as the best case for investigation of the effect of SCHS on the private property market.

4.8 Model formulation in this Dissertation

4.8.1 Variables

From equation 4, hedonic equation can be separated into two parts on both sides of the equal sign. The left part of the equal sign is the dependent variable while the right part is the independent variables. Rosen (1974) suggests that all attributes that can determine the market price of the goods which should include the ones generating utilities to users and costly to produce. However, more variables will increase the risk of having multicollinearity. This point is additionally agreed by Chau & Ng (1998) and Chan (2002) that higher number of variables required more substantial data to fit in to the equation. Therefore, only appropriate and crucial factors will be included in the hedonic price model used in this dissertation.

The dependent variable is the deflated price with price index. With modification of Li's (2005) model on the affect of HOS to private housing estate in Hong Kong, the following independent variable are chosen for this analysis of the effect of SCHS on nearby property price.

Type of attribute	Variable used in this model
Structural attribute	AGE – The age of the building when the transaction made FLOOR – Floor level of the flat in the building USIZES –The useable size of the flat
Locational attributes	SEAVIEW – whether the flat have a seaview or not
Neighbourhood attribute	AFFECT – The blocks next to the SCHS housing
Interaction Term	AFFECT * TIME04 – This use to measure the effects on the sale of SCHS flats to the property market.

Table 4.3 The Independent variable used on the model on this dissertation

Only seaview is included in the model as other views of the flats have no specific difference as found in pervious literatures. Moreover, the practical sales of flats in Hong Kong always stress on the flats having seaview or not but not the other specific views. Thus, for a more significant analysis, only 'seaview' is included.

Other neighbourhood effects are not included in the model except the most important factor of SCHS. This is because the area for investigation is small that we can assume that other neighbourhood effects are constant.

4.8.2 Dependent Variable

- RCONSIDER – Real Price at June, 2005

The price of the property transaction is used as the dependent variable in the hedonic price regression analysis. But the price of transaction was made in different time frames which were affected by different inflation rates and other macro economic factors. To have a fair comparison with different transactions records, a real price is used by deflating the price with the HKU Real Estate Price Indices (NT residential) as suggested by Chau *et al.* (2005). After the deflation, the effect of time or inflation is eliminated and the remaining differences in price are due to factors other than the overall residential price level.

Using the HKU Real Estate Price Indices instead of the property price published by the Rating and Valuation Department (RVD) from Hong Kong SAR government is due to three reasons.

Firstly, Chau *et al*. (2005)'s model on property price index is more empirical and clearly-developed comparing to RVD's property price index. They reviewed and compared various existing price index sources in Hong Kong,

which is known to be one of the most active real estate markets in the world. They also introduced a new source of transaction-based price index constructed using the repeat sales method. This HKU Real Estate Price Indices was not only useful for local real estate practitioners and investors, but it also provides a platform for researchers to study general issues related to the measurement of direct real estate returns. With the availability of such a rich set of data, more rigorous empirical studies can be conducted to enhance our understanding of the behavior of the direct real estate market, as well as the properties of price indices computed by different methods. Thus, using an index with a more literature background will be more persuasive than the RVD's index.

Secondly, Chau *et al.* (2005)'s data separate the indices into different zones which is more useful in this model. In Hong Kong, the price of different areas deviates a lot and they have a different return in terms of investment. Thus, on using the RVD's data, the price will include all parts instead of a specific part in Hong Kong. For HKU Real Estate Price Indices, it is divided into Hong Kong Island, Kowloon and New Territories. For this study, only Ma On Shan district, which is a part of New Territories, is investigated. So using HKU Real Estate

Price Indices (NT residential) will be a better choice.

Finally, the data is easily available in the internet which can be easily referenced by other scholars on verifying the result of this study.

Therefore, the HKU Real Estate Price Indices is used instead of RVD's property price indices.

The formula on calculating the real price is as follows:

$$RCONSIDER = CONSIDER * 130.79 / HKU\ REPI \quad \ldots (8)$$

where, RCONSIDER is the real price of the property in June, 2005
CONSIDER is the transaction price of the property at date of transaction made
130.79 is the HKU Real Estate Price Indices of N.T. in June, 2005
HKU REPI is the HKU Real Estate Price Indices of N.T. at date of transection

As the latest figure in the HKU Real Estate Price Indices of N.T. is at June, 2005, the entire price will deflate to that time frame.

4.8.3 Independent Variable

- USIZES – Useable Area of the flat in transaction

Spaciousness of a flat is the most important factor to be considered by the purchaser on the sales of flats. In pervious researches, Banjamin & Sirmans (1996), Huh and Kwak (1997), Guntermann & Borrbin (1987) use the number of rooms in the flats of sales as the determinant on the factor of sizes. But this approach is not objective enough as the partition of the rooms can be easily altered which affects the result.

To be more objective, the useable area of the flat per square feet is used. The useable area can be obtained from each transaction data in the Economic Property Research Centre (EPRC) database. The useable area is different from the gross floor area. Choosing the useable area instead of gross floor area is because in second hand transaction, purchasers only observe and care about how much area of the flat that they can use rather than the thickness of the walls and the area of clubhouse. Thus, useable area is more objective to reflect the intention of the purchaser on buying a second hand property.

Larger value of useable area, more spaces will be the flat and higher the value of that property. Thus, the useable area attribute of the flat should be positive.

- FLOOR – Floor level of the flat on transaction

FLOOR means the level of stories of the flat. Floor number is the attribute in the hedonic price model, i.e. for 11th Floor, 11 will be used in the model. From the research of Chau & Ng (1998), they concluded that the view of a higher unit is better as they can enjoy a quieter environment. Moreover, if the flat is facing to a busy road, upper floors can minimize the disturbance of noise and air pollution. The floor level should be a positive attribute to the property price and this data can be found from the transaction records from EPRC.

- AGE – the age of building while the transaction was made

AGE means the age of building while the transaction was made and recorded in the EPRC database. The deterioration of the property usually associates with some minor defects with the property itself like minor cracks and drainage problem. That risk premium, like maintenance fee, will be reflected in the price of the property which causes the transaction price lower than the original price. Thus, the age of a building will have a negative effect on the real price of the property from this proposition.

The AGE factor is calculated in terms of year as shown in equation 9:

AGE = Year of Transaction – Year of getting the Occupation Permit … (9)

Occupation permit was issued when the building was practically completed. That can be an indicator for the date of the perfect condition. Both the Year of getting the Occupation Permit and the year of transaction can be obtained from the EPRC database.

- SEAVIEW – whether the flat get a view of sea

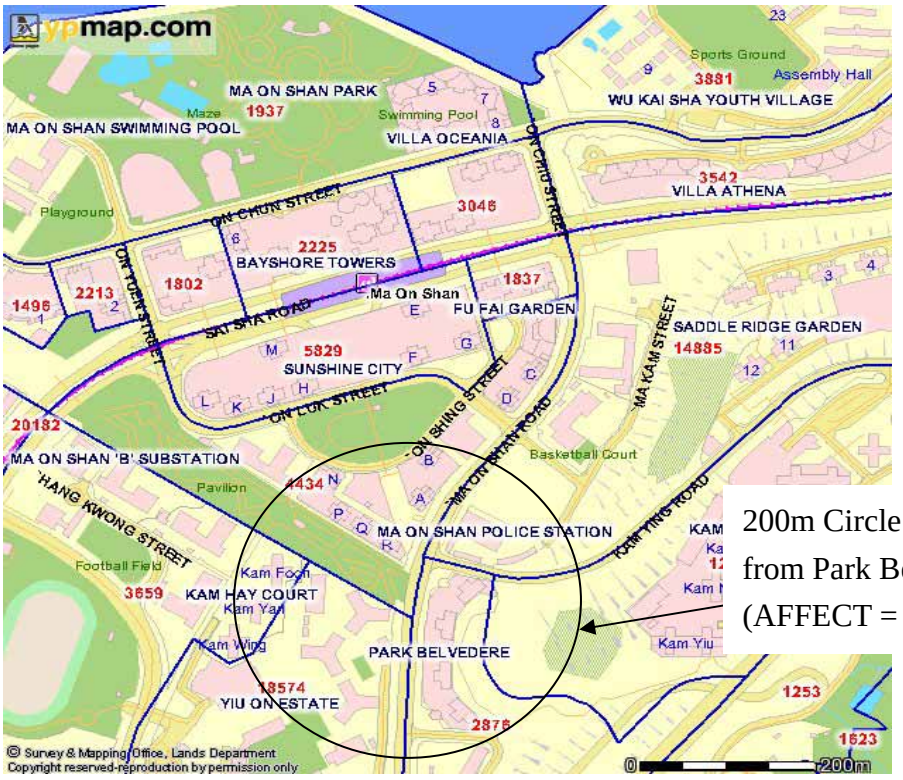
This is a dummy variable representing whether the property has a seaview or not. If sea view is found, a premium is always added for such properties. Having seaview will be noted as 1, otherwise will be 0 in the hedonic price model. Thus, the effects will be taken account.

- AFFECT – the selected properties might be affected by SCHS

This is a neighbourhood factor given to the properties next to Park Belvedere within the distance of 400m as shown in figure 4.2. In the circle, Block N, P , Q , R in phase III of Sunshine City and Block A,B in phase I of Sunshine City are included. Including different phases can eliminate the effect of the factor on special design of particular phases.

- AFFECT * TIME04 – Time dummy interaction term on study the effect of resale in SCHS

This is an interaction term on study the effect of the resale on SCHS to the nearby property market. As the SCHS had a restriction of not allowing for resale in the first five months from buying, we can assume that the property will not affect the supply to the property market. From the record of EPRC, there are some records on sales of Park Belvedere from 2000 to 2003 but they are not continuous and only few records of transaction available. Thus, the data from 1st January to 30th June of 2004 is used as a time frame to see the effect of sale of SCHS on the nearby property market.



200m Circle Centered from Park Belvedere (AFFECT = 1)

Fig. 4.2 Area of affection by the SCHS in this study.

4.9 Model formulation of this research

From the above attributes, a hedonic price model is generated.

$$RCONSIDER = b_0 + b_1 AGE + b_3 FLOOR + b_5 USIZES + b_7 SEAVIEW + b_8 AFFECT + b_9 AFFECT * TIME04 \quad \dots (10)$$

In order to study the linearity of the effect of AGE, FLOOR, USIZES, a square term is added to such functions. If the attitude is increasing/ decreasing at an increasing rate, a positive sign will be shown in the square term of that attribute. For example, if the AGE^2 term has a positive value, it means that the AGE factor is having an increasing rate. However, the square term of the dummy variable is not included because only 1 and 0 will be inserted in such values. Thus, the equation is revised as follows:

$$RCONSIDER = b_0 + b_1 AGE + b_2 AGE^2 + b_3 FLOOR + b_4 FLOOR^2 + b_5 USIZES + b_6 USIZES^2 + b_7 SEAVIEW + b_8 AFFECT + b_9 AFFECT * TIME04 \quad \dots (11)$$

The expected result of the equation 11 is shown in table 4.4:

Attributes in equation 11	Expected Result
AGE	- ve
AGE^2	Unknown
FLOOR	+ ve
$FLOOR^2$	Unknown
USIZES	+ ve
$USIZES^2$	Unknown
SEAVIEW	+ ve
AFFECT	- ve (hypothesis)
AFFECT * TIME04	- ve (hypothesis)

Table 4.4 The Expected result from the model of this research's model

Chapter 5 - Data Collection

5.1 Introduction

In order to build up the equation, reliable data should be placed into the model of regression in order to get the best result. From the model shown in equation 11, data of deflated property value, property related factors, and locational factors should be gathered for analysis.

The data can be found from the following sources:

1. The Economic Property Research Centre (EPRC)
2. HKU Real Estate Price Indices
3. The Centamap

5.2 The Economic Property Research Centre (EPRC)

The Economic Property Research Centre contains the rental transaction records registered in Land Registry throughout Hong Kong. The data source contains the transaction record from the beginning of 1991 to present. Moreover, it takes into account of nearly 90% of the transaction record in Hong Kong. Although it is a very useful tool on extracting property price of individual units, the data still has some deficiency. Firstly, some of the data is unbelievable which is mainly due to input errors. For example, there are some data with the floor level up to 441/F! Secondly, some of the data is partly hidden due to various reasons. For instance, some of the floor levels are only marked with “L/F” which means low floor level. Floor level are than missing. Therefore, some of the data will be excluded for a more accurate model formulation.

The EPRC record of individual flats consists of the consideration in the sales and purchase agreement, the date of transaction, size of unit, flat number and floor level, etc. These information are very important as they reflect the nature of the property.

The data is sorted from the EPRC database using two criteria. They are the name of block and the time of transaction made.

- Name of Block

The following blocks are sorted out from the EPRC database for investigation. They are listed in Appendix 3. There are total 26 residential blocks which provides plenty of data for the regression model.

- Time of Transaction made

The data in EPRC is available from 27 April, 1991 to present but only data from 1 August 1996 to 31 October 1999 and from 1 January 2004 to 30 June 2004 are extracted as shown in figure 5.1.

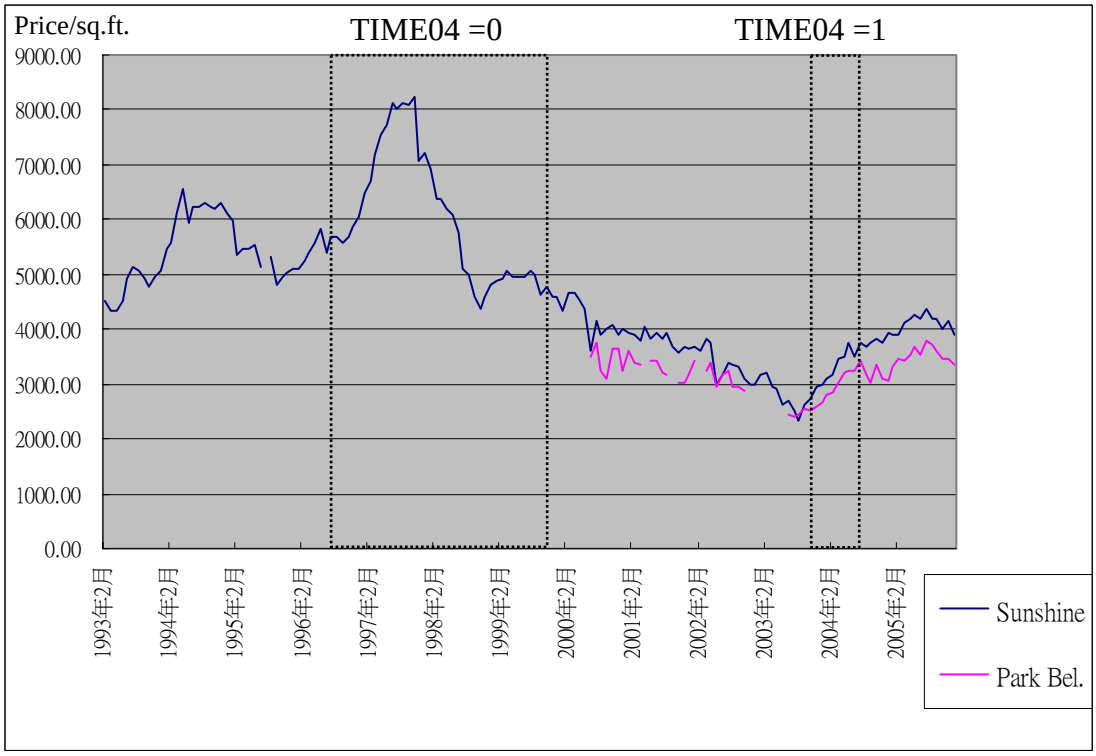


Fig 5.1 Price per square feet of Sunshine City Phase III and Park Belvedere

Before TIME04 = 0, some transaction records were presale data of Sunshine City. The presale price is different from the price determined by the market as the developer would apply some concessionary terms in order to raise the popularity of the units. Thus, those data is regarded as unreliable.

Between TIME 04=0 and TIME 04 =1, there are some non-continuous sales records from Park Belvedere. The amount of transaction record is very small that only 1-2 transaction was recorded per month. As that affection to the property market is really insignificant to the property market, the data between two time frames will not be used.

The reason on cutting the TIME04=1 in 30 June 2004 is due to the effect of completion on Ma On Shan Railway on December, 2004. The completion of Ma On Shan railway facilitates the transportation facilities to the nearby properties. Sunshine City and Bayshore Towers will be the most beneficial units in Ma On Shan district. So this would affect the sales price of such properties which causes deviation on the result.

Tthe data from 6 months before the completion is deleted so as to remove such affection to the result. Although the expectation effect cannot be eliminated due to the construction process, this is the most appropriate way to remove the effects and provide enough data set for running the regression model.

At the end, 4525 of observations is generated as input to the regression model.

5.3 HKU Real Estate Price Indices

The HKU Real Estate Price Indices is used to deflate the property value to a real property price without the effect of inflation and other macro economic factors. The Index is shown in Appendix 7.

The HKU Real Estate Price Index is more empirical, divided into different zones and easy available for reference. Thus, the HKU Real Estate Price Indices is extracted for deflating the property price in the model.

5.4 The Centamap

The Centamap is a key data source for the “SEAVIEW” factor. To identify whether the unit has seaview or not, the block plan is used as shown in figure 5.2.

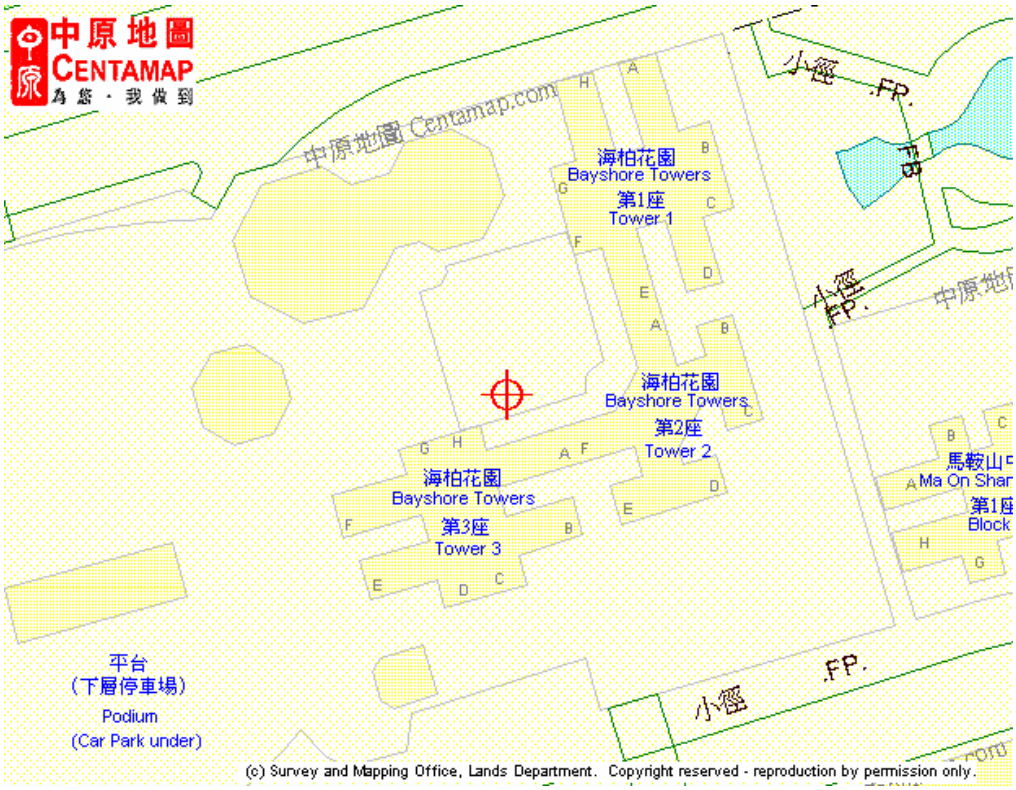


Fig. 5.2 The Identification of seaview in Bayshore Towers.
Source: Centamap.com (http://www.centamap.com/cent/index.htm)

In Figure 5.2, the block numbers and flat location are shown. In Tower 3 of Bayshore Towers, flat A , F , G , H faces the sea. Thus, those flats can enjoy a seaview of Tolo Harbour but not the others. In this case, 1 will be given to those flats in the dummy variable “SEAVIEW” while others will have “0” in their “SEAVIEW” attribute.

Chapter 6 - Result and Interpretation

6.1 Empirical Result of the Model

From the model of equation 11,

$$RCONSIDER = b_0 + b_1 AGE + b_2 AGE^2 + b_3 FLOOR + b_4 FLOOR^2 + b_5 USIZES + b_6 USIZES^2 + b_7 SEAVIEW + b_8 AFFECT + b_9 AFFECT * TIME04 \quad \ldots (11)$$

Data is input to the above model and sample statistics on the data are shown in table 6.1.

	RCONSIDER	CONSIDER	AGE	FLOOR	USIZES	SEAVIEW	AFFECT	TIME04
Mean	1.832	2.713	4.093	18.244	433.651	0.132	0.273	0.078
Median	1.71	2.58	4	18	379	0	0	0
Maximum	3.548	6.29	11	43	642	1	1	1
Minimum	0.024	0.02	1	1	332	0	0	0
Std. Dev.	0.445	0.933	2.116	10.051	95.555	0.339	0.445	0.268
Skewness	0.725	0.815	1.622	0.275	0.665	2.172	1.021	3.153
Kurtosis	2.977	3.571	5.847	2.288	1.91	5.719	2.042	10.939
Jarque-Bera	396.696	562.281	3511.851	152.367	557.366	4953.094	958.839	19380.76
Probability	0	0	0	0	0	0	0	0
Observations	4525	4525	4525	4525	4525	4525	4525	4525

Table 6.1 Sample Statistics put into hedonic price model.

The empirical result is shown in table 6.2.

Dependent Variable: RCONSIDER
Method: Least Squares
Date: 03/08/06 Time: 21:13
Sample(adjusted): 1 6207
Included observations: 4525
Excluded observations: 1682 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.066259	0.106828	0.620236	0.5351
AGE	-0.088186	0.005683	-15.5173	0
AGE^2	0.007107	0.000492	14.44112	0
FLOOR	0.009084	0.001108	8.198258	0
FLOOR^2	-7.69E-05	2.72E-05	-2.823038	0.0048
USIZES	0.004783	0.000462	10.36229	0
USIZES^2	-1.07E-06	4.94E-07	-2.16389	0.0305
SEAVIEW	0.088537	0.009354	9.465286	0
AFFECT	-0.111662	0.007619	-14.65502	0
AFFECT*TIME04	-0.031926	0.024515	-1.302263	0.1929

R-squared	0.792937	Mean dependent var	1.83234
Adjusted R-squared	0.792524	S.D. dependent var	0.44537
S.E. of regression	0.202865	Akaike info criterion	-0.3503
Sum squared resid	185.8118	Schwarz criterion	-0.3362
Log likelihood	802.6483	F-statistic	1921.11
Durbin-Watson stat	1.416333	Prob(F-statistic)	0

Table 6.2 Empirical result of the hedonic price model from equation 11

6.2 Interpretation on overall statistics

The hedonic price model explains around 79% of the variation of the dependent variable RCONSIDER as the model gives a value of 0.7929 in the R^2 statistics. It means that the model explains the high involvement of data. The main reason behind the argument is that the deviation in data is minimized by restricting the study in one district only.

The F-statistics given by the model is 1921.109 which is a relatively significant figure. Both the R^2 and F-statistics measures favors the rejection of the null hypothesis and it can be concluded that the hedonic price model can satisfactorily explain the independent variable used.

The above two statistics show that the overall statistics are satisfactory and significant enough to explain the hedonic price model.

6.3 Interpretation on individual attributes

- AGE, AGE^2

The negative coefficient of AGE in the model suggested that the age of the building has a negative effect on the property price. Moreover, the t-statistics (-15.5173) support the above argument in terms of statistical significance. This agrees with the expected result that depreciation lowers the value of the property.

The coefficient of the square term is positive which implies that the relationship of AGE and the property price may not be linear. It means that the relationship of AGE to the property price is a non-linear function with an increasing rate on it. It suggests that the effect of age to the building will be more statistically significant when the building gets older.

- FLOOR, FLOOR^2

The coefficient of FLOOR shows a positive sign which means that the floor level of the flat has a positive effect on the property price. Moreover, the t-statistics give a high result showing that the result of this attribute is statistically significant. It matches the expected results on this attribute that higher the floor level will increase its attractiveness to the purchaser. With that attractiveness, the purchaser is willing to pay an extra premium on having a property with a higher level in the building.

The square term of FLOOR2 shows a negative sign. It means that the relationship of FLOOR to the property price is a non-linear function with an decreasing rate on it. The t-statistics of FLOOR2 is a bit low but it is still statistically significant to the model. Thus, this result suggests that the FLOOR effect will be decreased with the floor increase higher and higher. This may due to the advantage on high level with respect on better view starts to diminished for a higher level. For example, the difference in view from 3/F – 13/F is significant while the difference will not be so significant from 23/F – 33/F.

- USIZES, USIZES^2

The coefficient of USIZES shows a positive sign which means that the useable size of the flat has a positive effect on the property price. Besides, the t-statistics give a result of 10.36229 showing that the result of this attribute is statistically significant. It matches with the expected results that larger flats will be sold at a higher price.

The square term of $USIZES^2$ shows a negative sign. It means that the relationship of USIZES to the property price is a non-linear function with a decreasing rate on it. The probability of this attribute be zero is 3.05% which still falls into the 5% acceptable range of statistically confidence. Thus, the result suggests that the USIZES effect will be decreased with the useable size becomes larger. This may be due to the increase in facilities from small flats to large flats. For a small flat, there are only 2 bedrooms and 1 toilet but there are 3 bedrooms and 2 toilets for larger flats. The extra facilities would increase the premium paid by the purchaser. But for the large flats, increase in size only increases the useable space but not associate with other additional facilities. So the increasing rate decreases with the increase in size.

- SEAVIEW

The coefficient of SEAVIEW is 0.088537 which is a positive value. It suggests that the seaview has a positive effect on the property price. The t-statistics shows a value of 9.465286 also reflects that seaview is significant to the property price contribution. It matches with the expected result on this attribute that a seaview usually sounds more beautiful and clam than the view on road and hillside. Thus the purchasers are willing to pay additional premium for the properties with seaview.

- AFFECT

The coefficient of AFFECT has the value of -0.111662 which is negative. It shows that this attribute has a negative effect on the property price. Moreover, the t-statistics of AFFECT is -14.65502 and its probability is 0.00000. Thus, the result of AFFECT can be concluded to be having a negative effect and is statistically significant.

The result suggests that the blocks of sunshine city block A,B,N,P,Q and R have a lower price than the control group on other properties in Ma On Shan within the same area. As the architectural deign of the properties are nearly the same, the deviation on price can be assumed to be not related to the architectural difference. Moreover, the properties of block A,B,N,P,Q and R are in phase 1 and 3 of sunshine city. The mixture of phases can minimize the effect of phase comparison to the control blocks.

From the explanation above, the negative effect on the housing blocks is mainly due to the existence of SCHS. But we cannot absolutely say that the effect is 100% due to the existence of SCHS as there are other variables which can affect the property price and SCHS may be just one of the attributes. But in

this research, the observation from different views has been considered and we can say that most of the variables seriously affecting the property price have been excluded. Thus, we can conclude that the SCHS has a negative effect on the nearby property price.

- AFFECT * TIME04

This interaction term of AFFECT*TIME04 aims at investigating the supply of SCHS affecting the nearby property market as the flats of SCHS can only be sold after 5 years from the first purchasing date from Housing Society. The result of this coefficient shows that the result is -0.031926 which is a negative number. Thus, there is a negative impact of the resale of SCHS on the nearby property market. Although it matches the hypothesis that increasing the supply of subsidized housing will affect the nearby property market, the result needs more interpretation. For this coefficient, the t-statistics is only read as -1.302263 which suggests that the result only significant at the 20% level. That the result is a bit statistically insignificant to the property value.

The reason for such statistically insignificant may due to several reasons. The most obvious one is that the supply of SCHS to the property market is insignificant which cannot cause a significant increase in the overall supply to the whole Ma On Shan area. In reality the transaction record of Park Belvedere is not as high as the transactions of other private estates in Ma On Shan as shown in table 6.3.

	Park Bel.	Affecting Group AFFECT = 1	Control Group AFFECT = 0	% of supply from Park Bel.
Jan-04	4	19	43	6.06%
Feb-04	4	20	30	7.41%
Mar-04	7	24	61	7.61%
Apr-04	4	23	44	5.63%
May-04	2	9	31	4.76%
Jun-04	7	16	33	12.50%

Table 6.3 The Supply of property to the market in Ma On Shan District compare to Park Belvedere

From table 6.3, that the supply of Park Belvedere to the market is not comparable to other private estates in Ma On Shan district. Because of the non-volatile market in Park Belvedere, there is insufficient data for the analysis of the effects of sales of SCHS in the region.

The limited supply of SCHS flats to the property market is possibly caused by several reasons.

The proportion of owner-occupiers in Park Belvedere has a record of 97.5%. (ypmap.com, 2006) This critical figure suggests that the owners of Park Belvedere are mainly the user of the property but not the speculators. Comparing with the rate of owner-occupiers in this district, which is 78.88%, the speculation effect in private property is clearly higher which makes the market more volatile. Hence, the limited supply of properties in Park Belvedere would impose an insignificant effect to the market.

Furthermore, the procedure on purchasing a SCHS flat in the property market is far more complicated than purchasing private property. On resale of a SCHS flats to the property market, land premium has to be paid to the government by the owner before the property can be put into the private market for sale. Although the Housing Society would provide assistance to property owners, the time required is a few months. Hence, lengthy procedure would impose unnecessary price. The property market in Hong Kong is commonly known to be volatile, in a few months' time, the property price would increase or

decrease to certain extent. Therefore, the number of transaction of resale of SCHS flats is limited.

In addition, the low incentive for local people to buy a SCHS explains the insignificant impact on the prices of private properties nearby. The difference in the property prices between Park Belvedere and Sunshine City Phase III, which are the representative examples for the whole Ma On Shan private property market, also supports the proposed statement.

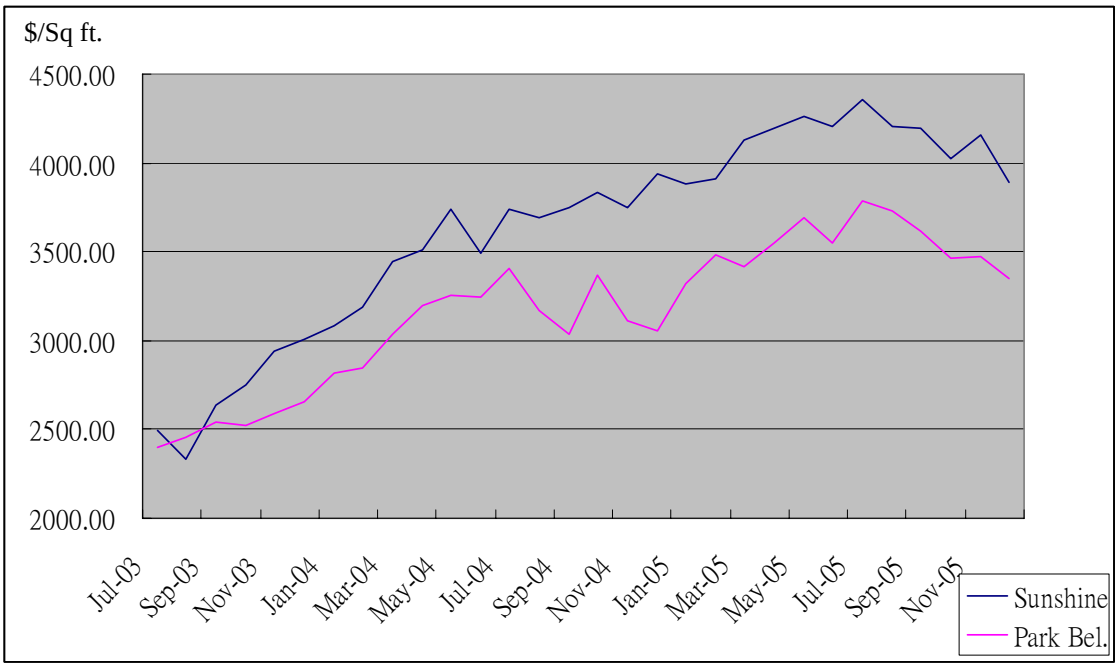


Fig 6.1 Price (per sq. ft.) Trend between Park Belvedere and Sunshine City Phase III

(Source: EPRC database)

In order to clearly demonstrate the price difference, a comparison of the Sep-03 and Dec-05 spot data is summarized in the table 6.4.

	Sunshine City Phase III Average ($/ Sq. ft)	Park Belvedere Average ($/ Sq. ft)	Difference
3-Sep	2638.73	2544.33	94.4
5-Dec	3893.14	3348.83	544.31
% increase	47.54%	31.62%	15.92%

Table 6.4 Comparison on the price gradient between Sunshine City Phase II and Park Belvedere
(Source: EPRC database)

In September 2003, the property prices between the private properties and the Park Belvedere were nearly the same. The price difference is only $94.4/sq ft. As time passes, the difference in prices increases and finally reached a difference of $544.31/sq. ft. The increase in value of private properties was 47.54% but the value of Park Belvedere increased only by 31.62%. Thus, it clearly shows that private property has a greater capital growth which eventually attracts more purchasers and investors. Therefore, the demand for private housing is greater than the SCHS properties. The result suggests that SCHS property only has a limited impact on the property market.

To conclude, the model proposed shows that SCHS has an insignificant negative effect on the nearby property value. This argument can be supported by the practical evidences with respect to the supply and demand within the Ma On Shan property market and the insignificant difference in household groups.

Chapter 7 - Conclusion and Further Studies

7.1 Summary of findings

The model shows an empirical result that the SCHS has a statistically significant negative effect on the nearby private property housing estate. Although the effect of supplying SCHS flats to the property market sounds statistically insignificant, the effect is still negative on the nearby properties.

This result matches with the hypothesis statement that 'The Sandwich Class Housing Scheme (SCHS) have a negative effect on the nearby property market'. This statement is driven by various literatures that for the increasing supply in property market, the disequilibrium will be reflected in the price of the nearby properties. Moreover, the housing policy of government will bring a negative effect to the property market and the subsidized housing will have a negative effect on the nearby property market.

Any forms of housing, no matter it's higher class or lower class, will affect the property market with a negative effect. The lower class housing estate, HOS, has a negative effect on the nearby private housing which has been proven by Li (2005). In this research, it is concluded that SCHS also has a negative effect on nearby private housing estates. Nowadays the Hong Kong SAR government only concentrates on controlling the property market by means of land supply and other financial subsidies. Take Park Belvedere as an example, if the owners put the flats to sale like the private properties without limitation, the negative effect to the property market will be definitely more significant and the property market will be affected.

From this research, it clearly shows that subsidizing policy is not an effective way to solve the problem of home ownership for the middle class citizens as it will have negative effects in the long-run.

To conclude, the SCHS has a negative effect on the nearby private property market. Although the effect on the supply of SCHS is not significant at present, the effect will be more significant if more flats of SCHS with premium paid and put for resale in private property market.

7.2 Limitation of This Research

In this research, some limitations restrict the accuracy of the result.

The attributes put into the hedonic price model of the research is limited. Due to simplicity, some attributes like mountain view and block view do not included into the hedonic price model which would cause deviation to the result.

The effect on shopping centre cannot be isolated in the research. Sunshine City and Bayshore Towers are the main shopping centers in Ma On Shan district. Some purchasers may consider it is an advantage on living on the popular malls so they would pay a premium on those flats. But this is hard to be isolated as it may be correlated with the 'AFFECT' attribute.

The expectation effect of Ma On Shan Railway cannot be controlled. Within the whole period of research, the Ma On Shan Rail is under construction. It would give a good will to the properties next to the station in certain extent. But it cannot be further control this expectation effect as it is long lasting and cannot be easily determined.

7.3 Suggestion on Further Studies

The Sandwich Class Housing Scheme is a special subsidized housing aiming at helping the middle class citizens.

This dissertation focuses on one SCHS housing estate only due to its simplicity. Other SCHS housing estates could be studied in order to verify the result. But if this has to be done, the model has to be adjusted and even reformulated as the variables vary in different places. For example, the SCHS in Tseung Kwan O will both affect by the completion of MTR Tseung Kwan O extension and many nearby HOS housing blocks. Those factors have to be carefully controlled in order to get a more accurate result.

This dissertation focuses on the micro property market of Ma On Shan District only. Sandwich Class Housing Scheme has 10 different housing estates which are located in different areas in Hong Kong. The overall impact of this housing ownership scheme to the whole Hong Kong property market still remains as a question in the literature. Thus, this area can be further studied so as to find out the overall effects of SCHS on the whole property market to Hong Kong.

Lastly, the approach can be altered to focus on the roles of the government in providing housing subsidies to middle class citizens. In various literatures, the subsidized housing only focus on helping the lower class citizens while only few places have tried to intorduce home ownership of middle class citizens. Thus, a comparative study of different governments in providing subsidies to the middle class would be another road for further research.

Appendix

Contents of Appendix

Appendix 1 - Limitations on monthly income on applying the SCHS

Estate	Date of Application	Limitations			
		Household income	Term of having no properties	Family capital	Family members
Tivoli Garden	17-12-1994 6-1-1995	$22,001 - 44,000	24 months	Not exceed $1,000,000	2
Park Belvedere	1-12-1995 15-12-1995	$25,001 - $50,000	24 months	Not exceed $1,000,000	2
Marina Habitat / Radiant Towers	26-7-1996 - 12-8-1996	$26,001 - $50,000	24 months	Not exceed $1,000,000	2
The Pinnacle/ Hibiscus Park/ Sunshine Grove	25-4-1997 - 12-5-1997	$30,001- $60,000	24 months	Not exceed $1,200,000	2
Highland Park /Cascades	26-9-1997 13-10-1997	$30,001 - $60,000	60 months	Not exceed $1,200,000	2
Bel Air Heights	15-6-1999 26-6-1999	$31,001- $60,000	60 months	Not exceed $1,200,000	2 or PRH member
Cascades/ Radiant Towers/ Park Belvedere	18-1-2000 18-4-2000	Family with 2 members or above $31,001-$60,000 Single $22,000	60 months	Not exceed $1,200,000 Single not exceed $400,000	1 or PRH member

Table 8.1 Limitations on monthly income on applying the SCHS
(Source: City University of Hong Kong, http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_excerption.htm [Accessed 15 - 1 – 2006])

Appendix 2 - Land Premium Paid for Converting the SCHS to Private Housing

Estate Name	Date of Sale	Land Premium (HK$) (Million)
Cayman Rise	8/2001	292
Mountain Shore	5/2002	350
Serenity Place	3/2003	463

Table 8.2 Land Premium paid for converting the SCHS to Private Housing
(Source: Housing Society Today, various issues.)

Appendix 3 - Blocks put into the model for stimulation

Block Name	affected
BAYSHORE TWR BLK 01	
BAYSHORE TWR BLK 02	
BAYSHORE TWR BLK 03	
BAYSHORE TWR BLK 04	
BAYSHORE TWR BLK 05	
BAYSHORE TWR BLK 06	
MA ON SHAN CTR BLK 01	
MA ON SHAN CTR BLK 02	
MA ON SHAN CTR BLK 03	
MA ON SHAN CTR BLK 04	
SUNSHINE CITY BLK A	affected
SUNSHINE CITY BLK B	affected
SUNSHINE CITY BLK C	
SUNSHINE CITY BLK D	
SUNSHINE CITY BLK E	
SUNSHINE CITY BLK F	
SUNSHINE CITY BLK G	
SUNSHINE CITY BLK H	
SUNSHINE CITY BLK J	
SUNSHINE CITY BLK K	
SUNSHINE CITY BLK L	
SUNSHINE CITY BLK M	
SUNSHINE CITY BLK N	affected
SUNSHINE CITY BLK P	affected
SUNSHINE CITY BLK Q	affected
SUNSHINE CITY BLK R	affected

Table 8.3 Blocks put into the model for stimulation

Appendix 4 – Building Plans of Housing Block Under Stimulation

Fig. 8.1 Building Plan of Block A of Sunshine City (In affecting group)
(Source: Centamap.com (2006) http://www.centamap.com)

Fig. 8.2 Building Plan of Block N of Sunshine City (In affecting group)
(Source: Centamap.com (2006) http://www.centamap.com)

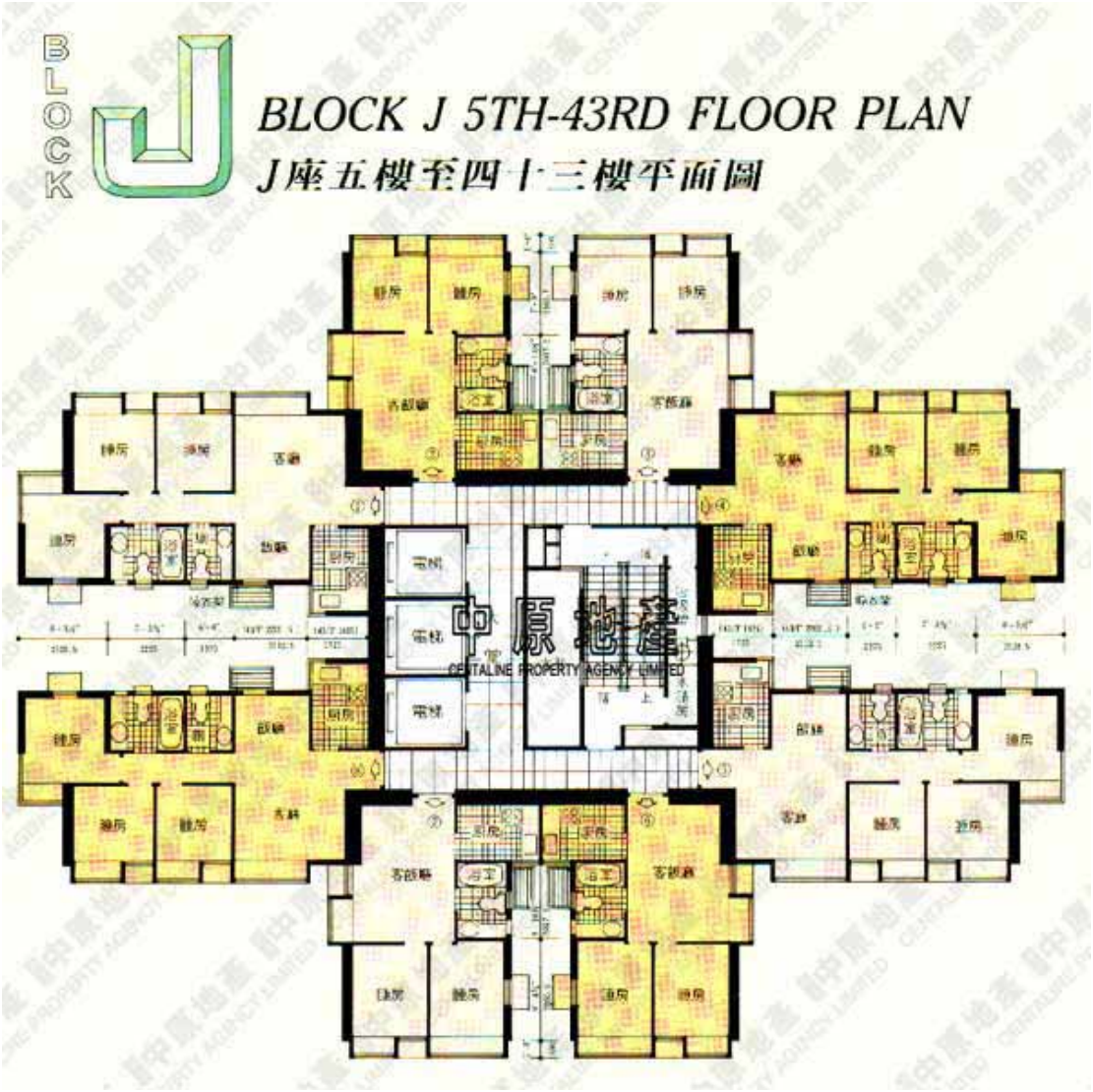


Fig. 8.3 Building Plan of Block J of Sunshine City
(Source: Centamap.com (2006) http://www.centamap.com)

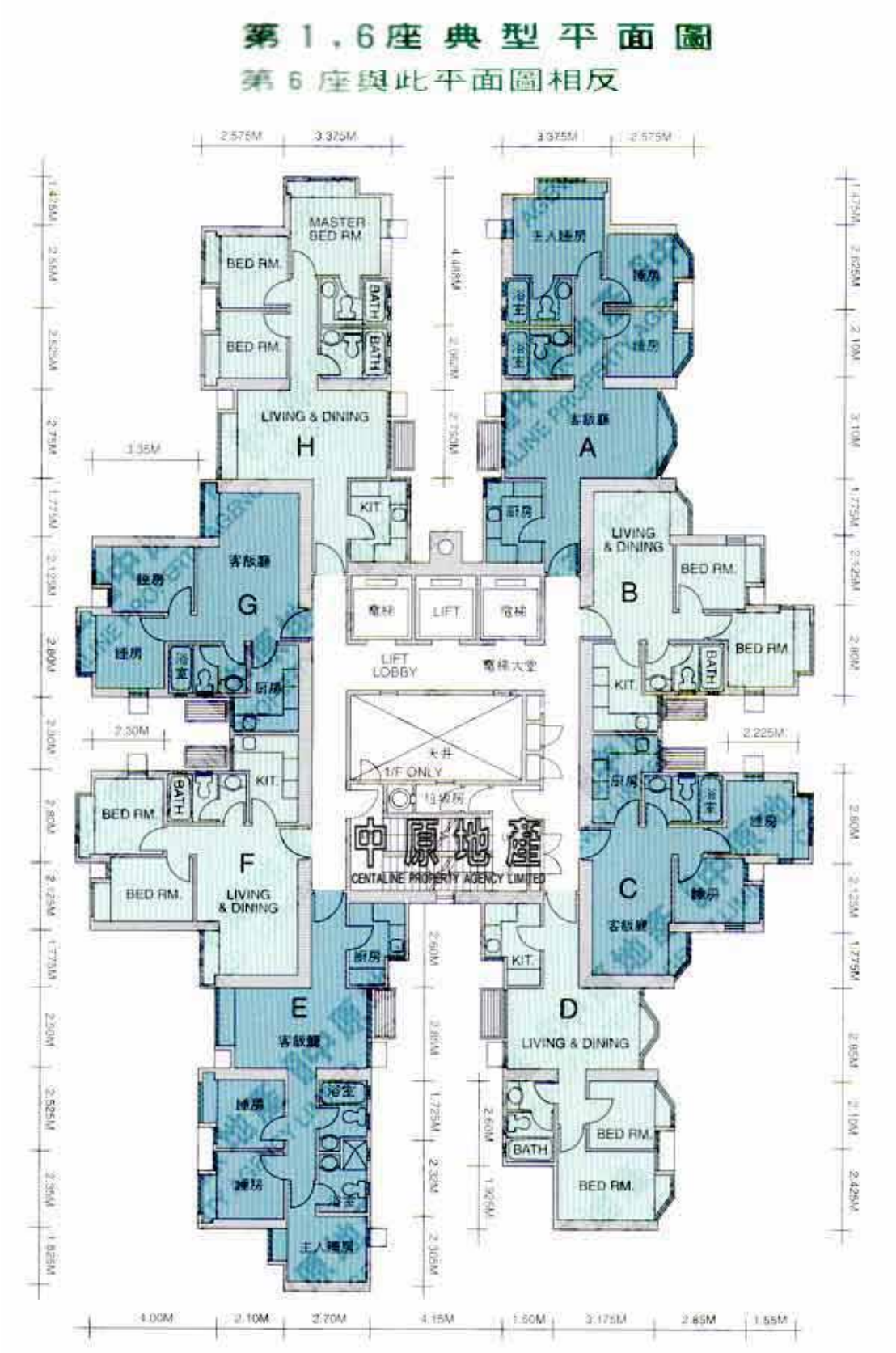


Fig. 8.4 Building Plan of Block 1 and 6 of Bayshore Towers
(Source: Centamap.com (2006) http://www.centamap.com)

Fig. 8.5 Building Plan of Block 2 and 5 of Bayshore Towers
(Source: Centamap.com (2006) http://www.centamap.com)

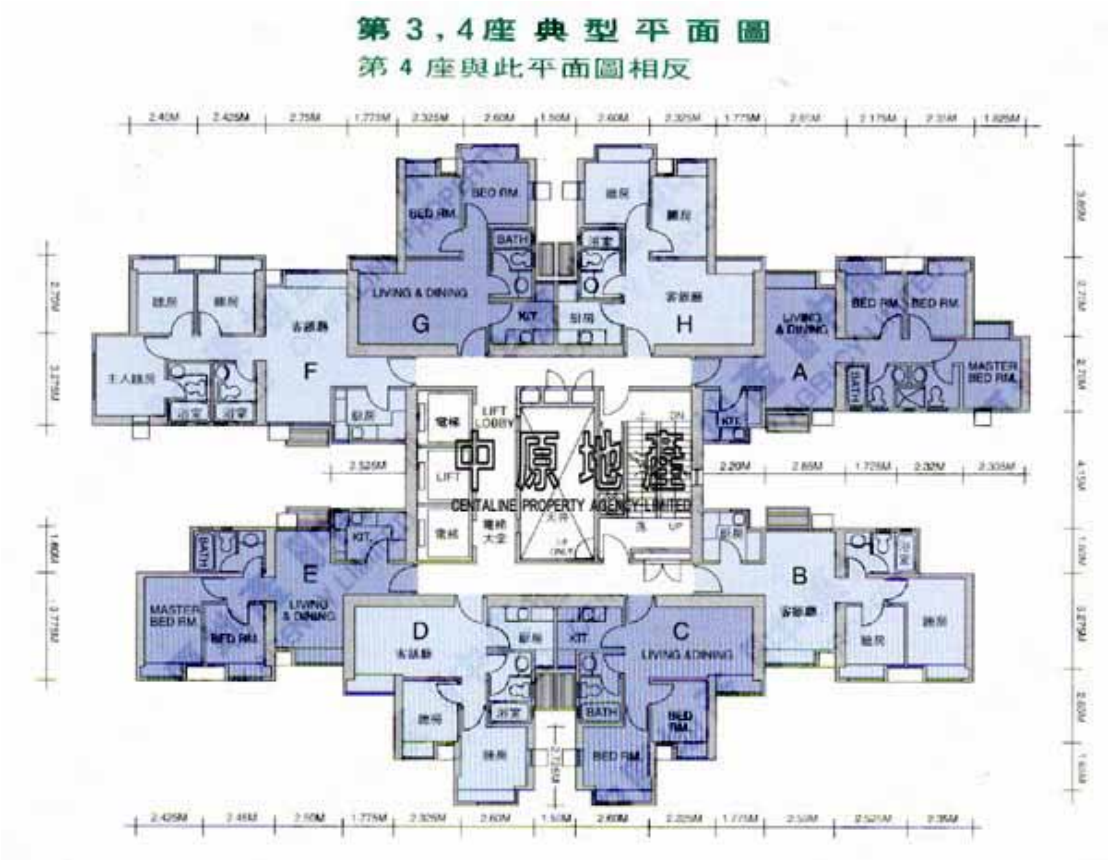


Fig. 8.6 Building Plan of Block 3 and 4 of Bayshore Towers
(Source: Centamap.com (2006) http://www.centamap.com)

Fig. 8.7 Building Plan of Block 1 to 4 of Ma On Shan Centre
(Source: Centamap.com (2006) http://www.centamap.com)

Appendix 5 – Private Domestic Supply, Take Up and Vacancy Rate from 1980 to 1995

Private Domestic (Supply, Take up and Vacnacy)
Small Units

Year	1980	1981	1982	1983	1984	1985	1986	1987
Supply (no. of Units)	24500	33500	23100	21600	22300	29900	34100	34400
Take Up (no. of Units)	20200	18000	19300	26200	23500	29500	30300	35100
Vacancy (no. of Units)	16700	29700	31200	24400	22400	22100	24700	22300
%*	3.5%	5.9%	6.0%	4.5%	4.0%	3.7%	3.9%	3.4%

Year	1988	1989	1990	1991	1992	1993	1994	1995
Supply (no. of Units)	34500	36500	27400	33400	26220	27670	34170	22620
Take Up (no. of Units)	33900	23700	29650	23350	22680	27320	23250	24710
Vacancy (no. of Units)	20200	30300	22550	33000	34070	32240	40710	36200
%*	2.9%	4.2%	3.2%	4.2%	4.2%	3.9%	4.7%	4.1%

* Vacancy at the end of the year, expressed as a % of total stock

Source: Rating and Valuation Department, Hong Kong Property Review (various issues)

Table 8.4 Private Domestic Supply, Take Up and Vacancy Rate from 1980 to 1995

Appendix 6 – Private Domestic Property Price in New Territories from 1986 to 1994 (With different class)

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994
Class A	7635	9454	12112	14379	15909	23145	32881	36019	41203
Class A ($/ sq ft)	709.57	878.62	1125.65	1336.34	1478.53	2151.02	3055.86	3347.49	3829.28
Class B	6889	8663	11472	14102	15650	22454	32539	37002	42189
Class B ($/ sq ft)	640.24	805.11	1066.17	1310.59	1454.46	2086.80	3024.07	3438.85	3920.91
Class C	7686	10092	12315	14150	12666	19100	30623	34669	42908
Class C ($/ sq ft)	714.31	937.92	1144.52	1315.06	1177.14	1775.09	2846.00	3222.03	3987.73
Class D	7772	9741	12147	14790	15498	20863	34200	41882	53548
Class D ($/ sq ft)	722.30	905.30	1128.90	1374.54	1440.33	1938.94	3178.44	3892.38	4976.58
Class E	6534	8284	11124	12827	15038	19910	20146	40966	59010
Class E ($/ sq ft)	607.25	769.89	1033.83	1192.10	1397.58	1850.37	1872.30	3807.25	5484.20
Average Price	7303.20	9246.80	11834.00	14049.60	14952.20	21094.40	30077.80	38107.60	47771.60
Average Price ($/sq ft)	678.74	859.37	1099.81	1305.72	1389.61	1960.45	2795.33	3541.60	4439.74

Where Class A – Saleable Area less than $40m^2$,
Class B – Saleable Area from $40m^2$ to 69.9 m^2
Class C - Saleable Area from $70m^2$ to 99.9 m^2
Class D - Saleable Area from $100m^2$ to 159.9 m^2
Class E – Saleable Area more than $160m^2$,

Table 8.5 Private Domestic Property Price in New Territories from 1986 to 1994 (With different class)
(Source: Rating and Valuation Department, Hong Kong Property Review (various issues))

Appendix 7 –HKU Real Estate Price Indices from 1994 to 2005

Year	Mth	Residential (NT)	Year	Mth	Residential (NT)	Year	Mth	Residential (NT)	Year	Mth	Residential (NT)	Year	Mth	Residential (NT)
1994	1	160.23	1996	1	150.88	1998	1	207.18	2000	1	142.22	2004	1	99.67
	2	166.65		2	155.22		2	196.80		2	142.58		2	102.93
	3	178.33		3	161.66		3	201.72		3	140.13		3	109.11
	4	181.35		4	165.76		4	191.65		4	137.98		4	111.11
	5	179.70		5	166.20		5	181.29		5	131.64		5	110.56
	6	179.68		6	171.95		6	159.57		6	121.97		6	109.17
	7	178.24		7	172.09		7	154.50		7	125.18		7	109.90
	8	179.84		8	174.41		8	153.15		8	125.28		8	110.53
	9	178.24		9	177.10		9	144.81		9	127.37		9	110.66
	10	177.51		10	180.49		10	143.03		10	127.77		10	116.16
	11	177.89		11	185.94		11	155.68		11	122.90		11	116.91
	12	170.59		12	194.94		12	153.24		12	120.43		12	116.92
1995	1	167.08	1997	1	207.30	1999	1	153.96				2005	1	117.58
	2	162.05		2	220.83		2	152.81					2	120.71
	3	160.93		3	242.40		3	152.00					3	125.77
	4	167.57		4	250.95		4	152.95					4	129.30
	5	166.92		5	255.21		5	153.87					5	131.15
	6	152.35		6	270.18		6	152.95					6	130.79
	7	151.15		7	267.05		7	153.81						
	8	152.76		8	263.45		8	152.07						
	9	152.09		9	264.18		9	146.70						
	10	148.44		10	263.08		10	142.28						
	11	151.67		11	229.71		11	138.88						
	12	152.02		12	231.76		12	141.67						

Table 8.6 HKU Real Estate Price Indices from 1994 to 2005
(Source, Chau *et al.* (2005))

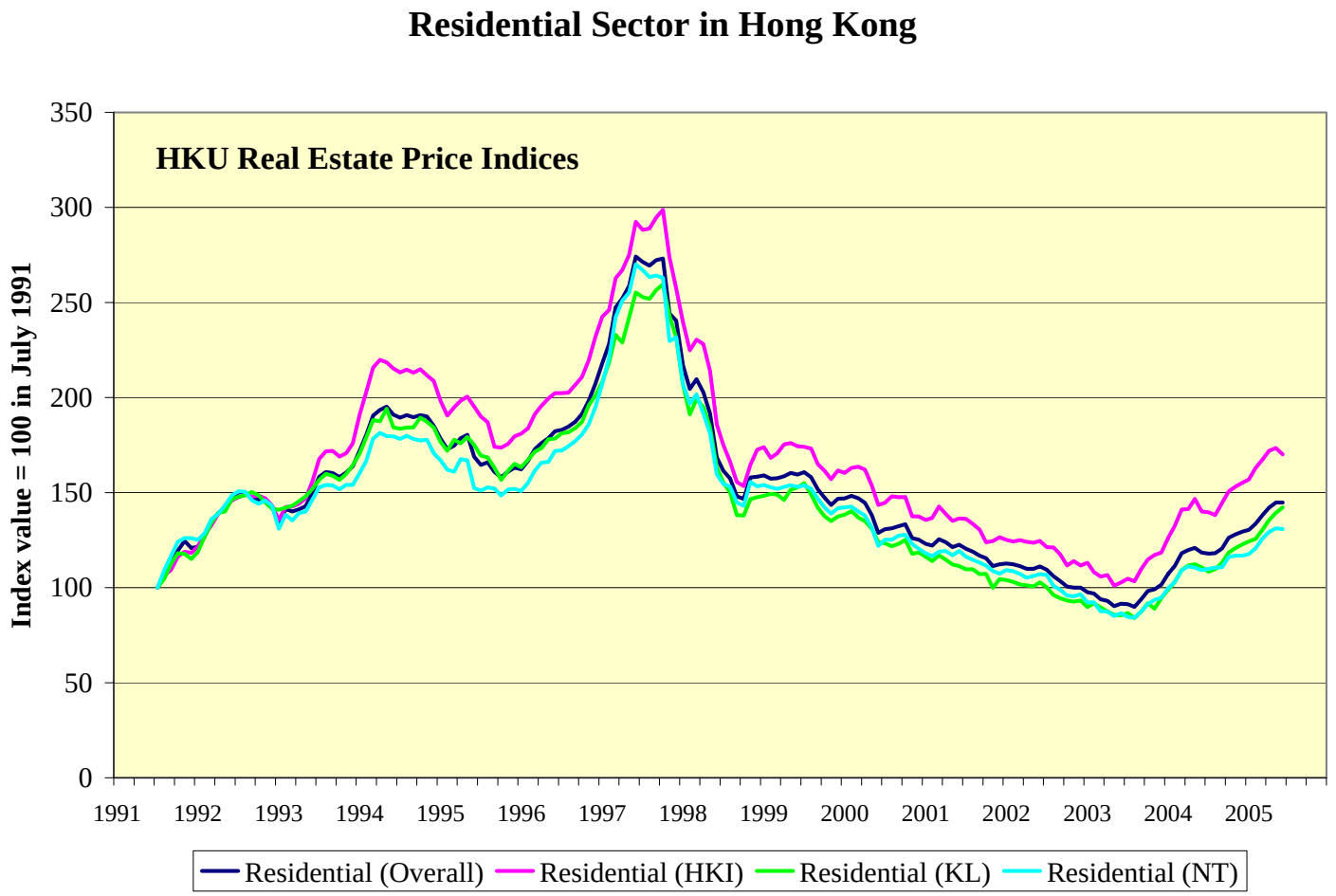


Figure 8.8 Trend of HKU Real Estate Price Indices from 1991 to 2005
(Source: Chau *et al.* (2005))

Appendix 8 - Site Survey on Buildings under Investigation

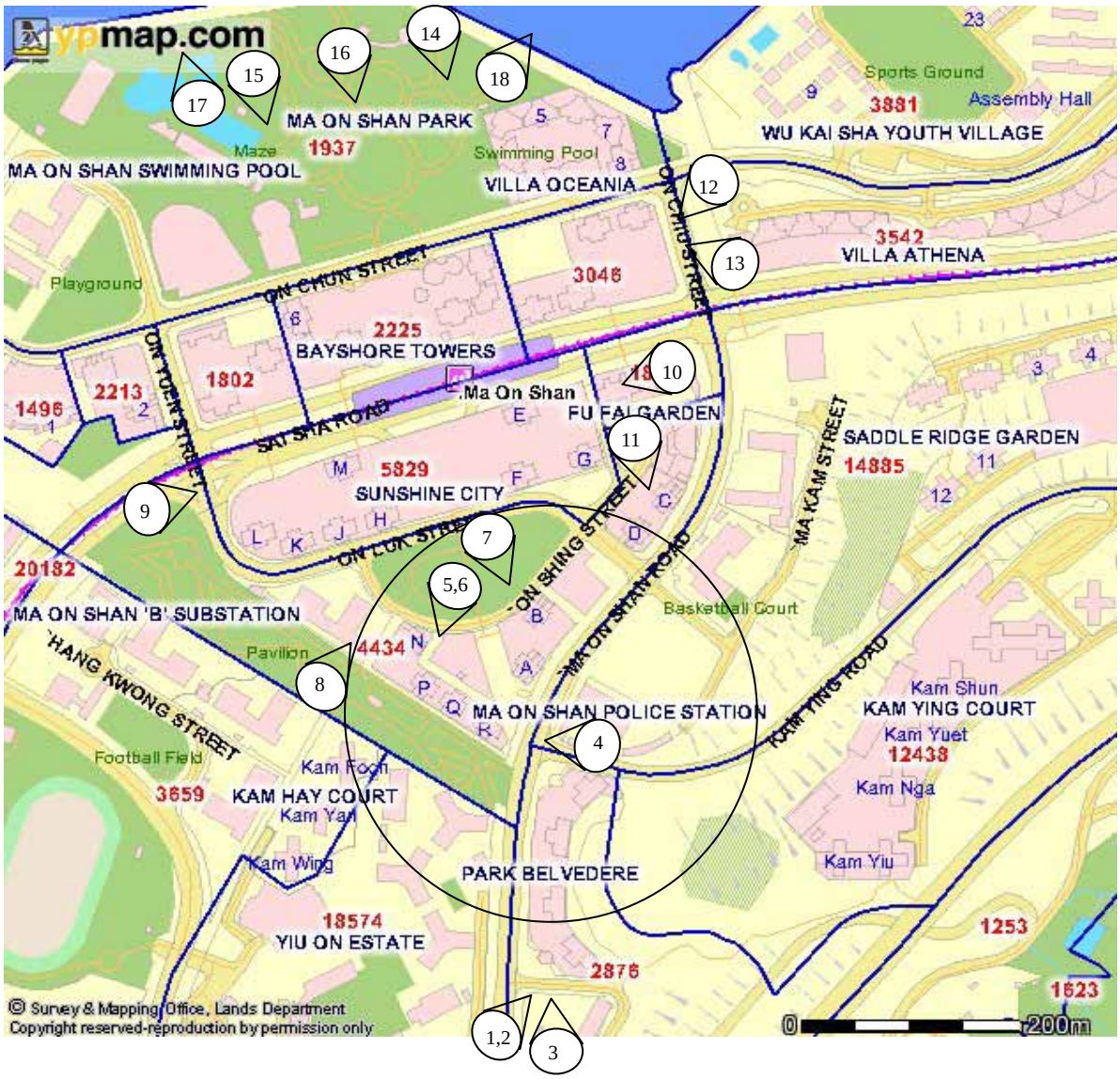


Figure 8.9 Index of the photo under investigation

Photo	Description
1	View of Park Belvedere
2	Entrance 1 of Park Belvedere
3	Logo of Park Belvedere next to entrance 1
4	Entrance of Sunshine City Phase III
5	Residential Blocks of Sunshine City Phase III (Block N,P,Q,R)
6	Entrance of Sunshine City Block N
7	Residential Blocks of Sunshine City Phase I (Block A,B)
8	Residential Blocks of Sunshine City (Block E,F,G)
9	Residential Blocks of Sunshine City (Block H,J,K,L,M)
10	Residential Blocks of Sunshine City (Block E,F,G)
11	Residential Blocks of Sunshine City (Block C,D)
12	Residential Blocks of Sunshine City and Ma On Shan Centre(*)
13	Residential Blocks of Ma On Shan Centre (Block 3,4)
14	Residential Blocks of Ma On Shan Centre and Bayshore Towers from Ma On Shan Park
15	Residential Blocks of Bayshore Towers from Ma On Shan Park (Block 4,5,6)
16	Overall Picture of Residential Blocks in Bayshore Towers
17	Seaview of Tolo Harbour from Bayshore Towers and Ma On Shan Centre
18	Seaview of Tolo Harbour from Bayshore Towers and Ma On Shan Centre

Table 8.7 List of photo under investigation

Photo 1 View of Park Belvedere

Photo 2 Entrance 1 of Park Belvedere

Photo 3 Logo of Park Belvedere next to entrance 1

Photo 4 Entrance of Sunshine City Phase III

Photo 5 Residential Blocks of Sunshine City Phase III (Block N,P,Q,R)

Photo 6 Entrance of Sunshine City Block N

Photo 7 Residential Blocks of Sunshine City Phase I (Block A,B)

Photo 8 Residential Blocks of Sunshine City (Block E,F,G)

Photo 9 Residential Blocks of Sunshine City (Block H,J,K,L,M)

Photo 10 Residential Blocks of Sunshine City (Block E,F,G)

Photo 11 Residential Blocks of Sunshine City (Block C,D)

Photo 12 Residential Blocks of Sunshine City and Ma On Shan Centre(*)

Photo 13 Residential Blocks of Ma On Shan Centre (Block 3,4)

Photo 14 Residential Blocks of Ma On Shan Centre* and Bayshore Towers from Ma On Shan Park

Photo 15 Residential Blocks of Bayshore Towers from Ma On Shan Park (Block 4,5,6)

Photo 16 Overall Picture of Residential Blocks in Bayshore Towers

Photo 17 Seaview of Tolo Harbour from Bayshore Towers and Ma On Shan Centre

Photo 18 Seaview of Tolo Harbour from Bayshore Towers and Ma On Shan Centre

Appendix 9 - Application form of Park Belvedere (1995 version)

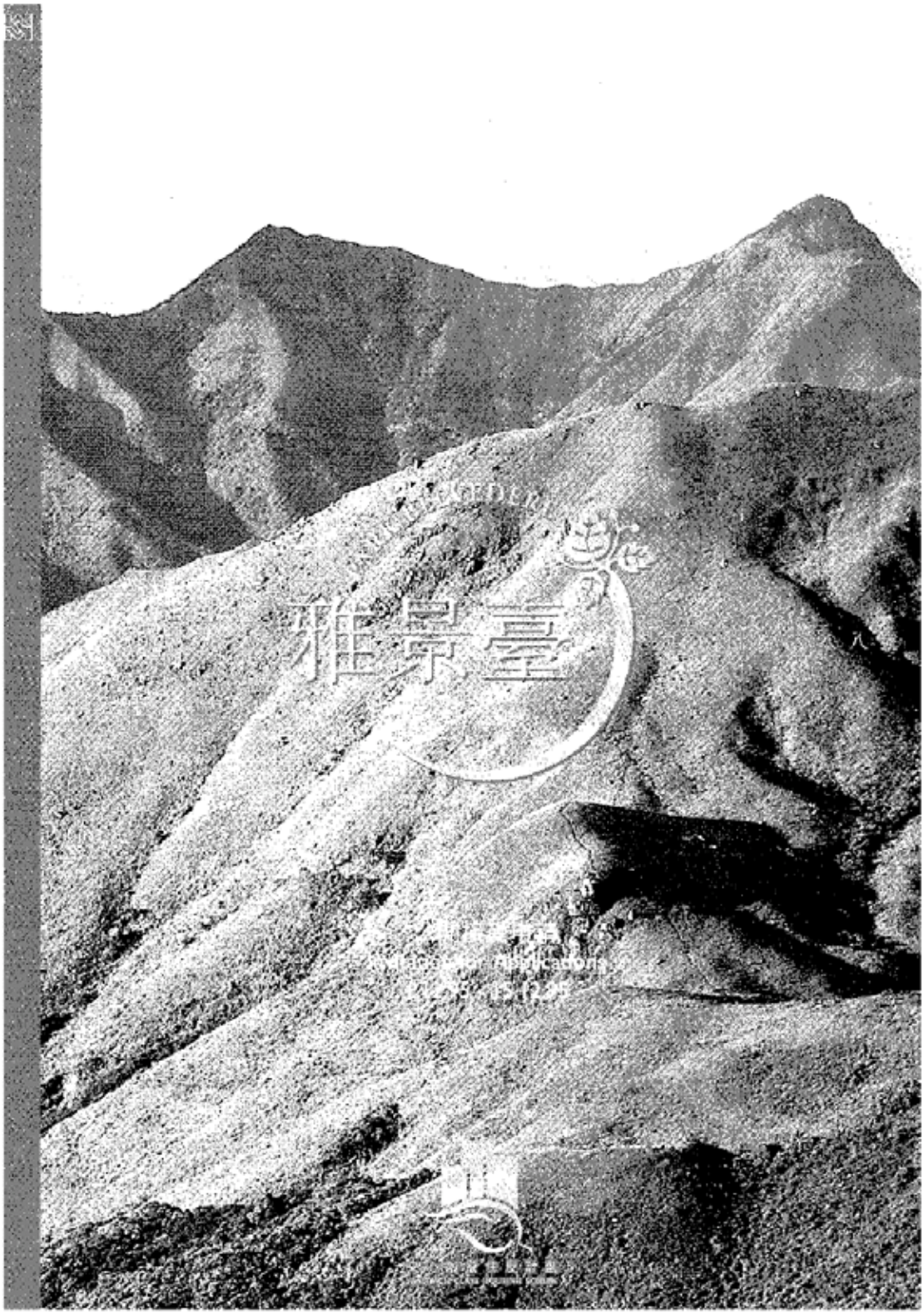


Figure 8.10 Page 1 of the Application form of Park Belvedere
(Source: Hong Kong Housing Homepage, City University of Hong Kong
http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_1.pdf)

香港房屋協會
HONG KONG HOUSING SOCIETY

FOR OFFICE USE ON
A
P
F. Class

夾心階層住屋計劃
SANDWICH CLASS HOUSING SCHEME
購買馬鞍山雅景臺單位或加入預先登記冊申請書
APPLICATION FOR PURCHASE OF FLATS IN PARK BELVEDERE MA ON SHAN OR PRELIMINARY REGISTRATION

截止日期：一九九五年十二月十五日
Closing Date: 15 December 1995

申請人姓名 (英 文) (中 文)
Applicant's Name (English) _____ (Chinese) _____

住址 住宅電話
Home Address _____ Home Telephone _____

辦事處電話
_____ Office Telephone _____

通訊地址
Correspondence Address
(請用英文填寫) (Please use English)

家庭狀況：
Family Details:

姓名 Name		香港身份證號碼 Hong Kong Identity Card No.	性別 Sex	出生日期 Date of Birth 年 月 日 year/month/day	與申請人關係 Relationship	每月總入息 (請參看註二) Total Monthly Income (See Note II)
英文 (請用正楷) English (Please Print)	中文 Chinese					
					申請人 Applicant	
						總額 Total HK$

如無香港身份證號碼，請填寫出生證明書號碼
If H.K. Identity Card No. is not available, please put down Birth Certificate No.

請在其中一個適當的□內加✓號
Please ✓ in one of the appropriate □

1. □ 本人申請購買馬鞍山雅景臺單位，現附上以「香港房屋協會」名義抬頭的銀行支票/本票港幣一百二十元作為申請費。(銀行名稱：_____ 支票/本票號碼：_____)
I apply for purchasing a flat in Park Belvedere Ma On Shan. Enclosed please find a cheque/cashier order No. _____ of _____ Bank in the amount of $120 made payable to Hong Kong Housing Society.

2. □ 本人只申請加入預先登記冊，並不打算申請購買馬鞍山雅景臺，現附上以「香港房屋協會」名義抬頭的銀行支票/本票港幣一百二十元作為申請費。(銀行名稱：_____ 支票/本票號碼：_____)
I apply for inclusion in the preliminary register only, and do not intend to apply for purchase of a flat in Park Belvedere Ma On Shan. Enclosed please find a cheque/cashier order No. _____ of _____ Bank in the amount of $120 made payable to Hong Kong Housing Society.

申請人簽名 Applicant's signature 日期 Date

填妥之申請書連同所需費用須於一九九五年十二月十五日或以前寄回香港銅鑼灣郵政總局信箱三〇九六八號香港房屋協會，信封面請明註「夾心階層住屋計劃」。無論申請成功與否，申請費概不退回，亦不能轉讓。不以郵遞方式遞交之申請表恕不接受。
The completed application form with the appropriate application fee must be mailed to Hong Kong Housing Society, Causeway Bay P.O. Box 30968, Hong Kong on or before 15 December 1995. The application fee is non-refundable and non-transferable. Please also mark "Sandwich Class Housing Scheme" on the envelope. Application forms not submitted by post will not be accepted.

注意事項：
Points to note:

1. 在填寫本申請表前，請仔細閱讀此計劃之各項細則。
Please read through the Scheme details carefully before completing the application form.
2. 申請人必須填寫表格上所須填寫的資料，如有遺漏，申請書可能不被考慮。
Applicants are required to complete all the details required in the application form. Otherwise, the application may not be considered.
3. 每位申請人只可遞交一份申請書，而每位人士不得同時被包括在超過一份申請書內，如有發現重複，所有申請書將被取消。
An applicant should submit only one application and each person should not be included in more than one application. Any duplication will render all the applications disqualified.
4. 香港房屋協會保留權利不接受任何申請書。
Hong Kong Housing Society reserves all rights not to accept any application.
5. 此表格不適用於已在夾心階層住屋計劃預先登記冊內的人士。
Persons in the Sandwich Class Housing Scheme preliminary register should not use this application form.

Figure 8.11 Page 2 of the Application form of Park Belvedere
(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_1.pdf)

PRELIMINARY REGISTRATION

Applications for the preliminary registration are now invited from families matching the basic eligibility criteria. Registered applicants will be periodically provided with the latest information of the different projects under planning or construction. They will be invited to make applications to purchase flats whenever a sale exercise comes up. If an applicant fails to purchase a flat due to over-subscription, his/her name will remain on the preliminary register and may re-apply in the next upcoming sale exercise without having to pay a further application fee up to 31 December 1996.

ELIGIBILITY CRITERIA FOR PRELIMINARY REGISTRATION

1. The family should comprise at least two directly related members including the applicant, and all family members included in the application must be residing in Hong Kong. (Note I)
2. Total family income must be between HK$25,001 and HK$50,000 per month with the applicant being the major income earner. (Note II)
3. All family members included in the application must not own any residential properties in Hong Kong in any form or manner directly or indirectly for the time being. In order to be eligible to purchase flats under the Scheme, all family members included in the application must not have owned any residential properties in Hong Kong within a period of 24 months prior to the closing date of the application period of each sale of the projects and they should continue not to own any residential properties during the process of the application. (Note III)
4. The applicant must be aged 18 or over having resided in Hong Kong for seven or more years, and he/she must either have the right of abode in Hong Kong or is holding a Hong Kong Identity Card having stay in Hong Kong not limited by the Hong Kong Immigration Department. (Note IV)
5. The family should not own total disposable assets of more than HK$1 million.
6. All family members included in the application must not be authorized tenants/occupants of public housing units or Home Ownership Scheme units nor have they enjoyed/been enjoying home purchase assistance offered by Government, except where the Government assistance is to be used for purchasing a property under Sandwich Class Housing Scheme. (Note V)

Eligibility Criteria are subject to review from time to time and details for each sale exercise will be announced together with the invitation for that exercise.

NOTE I

(i) Family members include only the spouse, natural children or lejally adopted children, parent and/or siblings of the applicant, or his/her spouse.

(ii) If the applicant's sibling applying together is under 18 years old or if the sibling has reached 18 and is not working, the parents of the sibling must be included in the application.

NOTE II

For computation of family income, the following will be included:

(i) All income before tax including current salaries and wages, regular or temporary bonuses, commissions, pensions and all types of allowances except old age allowances and disability allowances from the Comprehensive Social Security Assistance Scheme.

(ii) All gross income derived from properties (residential or non-residential in Hong Kong or overseas), vehicles, operating business and shares (excluding shares of listed companies) which are still in the possession of the applicant or any of the family members included in the application, before deduction of mortgage payments, taxes and other outgoings.

(iii) For irregular income or the irregular portion of total income, the average of the previous 12 months will be taken.

NOTE III

(i) Properties held by private companies solely or partly owned by the applicant or any of the family members included in his/her application will be considered as owned by the applicant or that family member.

(ii) Examples of having an interest in residential properties:-
(a) having entered into a binding agreement for sale and purchase to purchase a residential unit; or
(b) beneficiary of an estate of a deceased person which includes a residential unit; or
(c) own a residential property which is subject to a binding agreement for sale and purchase.

(iii) Examples in (ii) above are given as illustrations only and are not intended to be exhaustive.

NOTE IV

Length of residence will be taken as evidenced by the relevant information on the identity card of the applicant or information from the Immigration Department records.

NOTE V

The following categories of persons are <u>not eligible</u> to apply:

(i) Persons included in the tenants' register or tenancy agreement of public housing estates of the Hong Kong Housing Authority, Hong Kong Housing Society, Hong Kong Settlers Housing Corporation Limited, temporary housing area and cottage area.

(ii) Persons included in the tenants' register (including ex-owners) of the Hong Kong Housing Authority's Home Ownership Scheme, Private Sector Participation Scheme, middle income family housing estate Melody Garden, Home Purchase Loan Scheme, Hong Kong Housing Society's Flat For Sale Scheme, Sandwich Class Housing Loan Scheme and Sandwich Class Housing Scheme.

(iii) Persons who have already received or are receiving benefits under any Government home purchase assistance scheme, except where the assistance is to be used for the purchase of a property under Sandwich Class Housing Scheme.

Figure 8.12 Page 3 of the Application form of Park Belvedere

(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_1.pdf)

PARK BELVEDERE, MA ON SHAN

ELIGIBILITY CRITERIA FOR PURCHASE OF FLATS IN PARK BELVEDERE

Applications for purchase of flats in PARK BELVEDERE are now invited from families matching the following basic eligibility criteria:

1. The family should comprise at least two directly related members including the applicant, and all family members included in the application must be residing in Hong Kong. (Note I)
2. Total family income must be between HK$25,001 and HK$50,000 per month with the applicant being the major income earner. (Note II)
3. All family members included in the application must not have owned any residential properties in Hong Kong in any form or manner directly or indirectly within a period of 24 months prior to 15 December 1995 and during the process of the application (in case of any uncertainties or disputes, the Housing Society's decision shall be final and conclusive). (Note III)
4. The applicant must be aged 18 or over having resided in Hong Kong for seven or more years, and he/she must either have the right of abode in Hong Kong or is holding a Hong Kong Identity Card having stay in Hong Kong not limited by the Hong Kong Immigration Department. (Note IV)
5. The family should not own total disposable assets of more than HK$1 million. (Note V)
6. All family members included in the application must not be authorized tenants/occupants of public housing units or Home Ownership Scheme units nor have they enjoyed/been enjoying home purchase assistance offered by Government, except where the assistance is to be used for the purchase of a property under Sandwich Class Housing Scheme. (Note VI)

NOTE I

(i) Family members include only the spouse (Marriage Certificate issued on or before 15 December 1995 must be produced), natural children or legally adopted children, parent and/or siblings of the applicant or his/her spouse.

(ii) Families consisting of single parents must produce evidence of final divorce documents with legal custody of children or a Death Certificate of spouse. Otherwise the spouse and all children must be included in the application.

(iii) If the applicant's sibling applying together is under 18 years old or if the sibling has reached 18 and is not working, the parents of the sibling must be included in the application.

(iv) Consideration will only be given to the following family compositions. Their priorities are:

Priority	Family Composition
1st	Applicant + spouse and/or child(ren)
2nd	Applicant + parent(s)
3rd	Applicant + sibling(s)

NOTE II

(i) The applicant and all working family members included in the application must produce certificates from their employers on income from their current employments.

(ii) The applicant and all family members included in the application must fully disclose details of all properties (residential or non-residential in Hong Kong or overseas), vehicles, operating business and shares (excluding shares of listed companies) which they own or hold as trustee or in any capacity whatsoever during the period of 24 months immediately prior to 15 December 1995.

(iii) The applicant and all income earning family members must produce tax returns and/or tax demand notes for the previous year or other documents acceptable to Hong Kong Housing Society.

(iv) For computation of family income, the following will be included:
- (a) All income before tax including current salaries and wages, regular or temporary bonuses, commissions, pensions and all types of allowances except old age allowances and disability allowances from the Comprehensive Social Security Assistance Scheme. Current salaries and wages mean salaries or wages earned at the time of assessment.
- (b) All gross income derived from holdings described in (ii) above which are still in the possession of the applicant or any of the family members included in the application, before deduction of mortgage payments, taxes and other outgoings.
- (c) For irregular income or the irregular portion of total income, the average of the previous 12 months will be taken.
- (d) In addition to sub-clause(a), (b) and (c) hereof, for self employed applicants, evidence of income of the previous year in the form of audited accounts and tax demand notes must also be produced for assessment.

NOTE III

(i) Properties held by private companies solely or partly owned by the applicant or any of the family members included in his/her application will be considered as owned by the applicant or that family member.

(ii) Examples of having an interest in residential properties:
- (a) having entered into a binding agreement for sale and purchase to purchase a residential unit; or
- (b) beneficiary of an estate of a deceased person which includes a residential unit; or
- (c) own a residential property which is subject to a binding agreement for sale and purchase.

(iii) Examples in (ii) above are given as illustrations only and are not intended to be exhaustive.

NOTE IV

Length of residence will be taken as evidenced by the relevant information on the identity card of the applicant or information from the Immigration Department records.

Figure 8.13 Page 4 of the Application form of Park Belvedere
(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_1.pdf)

NOTE V

The applicant and each family member included in the application will be required to declare the total assets in his/her possession in the form of landed property at current market value (after deducting outstanding mortgage amount, if any), stocks and shares at current value, vehicles, bank deposits and unit trust funds (local and/or overseas). The applicant and each family member included in the application will also be required to declare full details of all properties which are being held or were held by them in the capacity of trustee or in any capacity whatsoever.

NOTE VI

The following categories of persons are **not eligible** to apply:

(i) Persons included in the tenants' register or tenancy agreement of public housing estates of the Hong Kong Housing Authority, Hong Kong Housing Society, Hong Kong Settlers Housing Corporation Limited, temporary housing area and cottage area.

(ii) Persons included in the tenants' register (including ex-owners) of Hong Kong Housing Authority's Home Ownership Scheme, Private Sector Participation Scheme, middle income family housing estate Melody Garden, Home Purchase Loan Scheme, Hong Kong Housing Society's Flat-For-Sale Scheme, Sandwich Class Housing Loan Scheme and Sandwich Class Housing Scheme.

(iii) Persons who have already received or are receiving benefits under any Government home purchase assistance scheme, except where the assistance is to be used for the purchase of a property under Sandwich Class Housing Scheme.

APPLICATION PROCEDURES FOR PURCHASE OF FLATS IN PARK BELVEDERE

1. All applications will be assigned with priority numbers at random by a specially designed computer balloting programme. Results of the ballot will be published on 30 December 1995 in the South China Morning Post and Sing Tao Daily and copies will be displayed in Hong Kong Housing Society's offices for public inspection. In addition, applicants will be notified individually in writing of their balloted priority numbers.
2. Applicants will have to attend interviews in person at Housing Society's office in accordance with priority numbers and family composition preferences until all 882 flats are sold. All necessary documents to verify their eligibility under the Scheme must be provided within a specified time frame. Failure to do so will result in disqualification.
3. The successful applicant and all the family members included in the application who are aged 18 or over will be required to make statutory declarations under the Oaths and Declarations Ordinance, Cap. 11, Laws of Hong Kong that all the information and documentation supporting the application are true, correct and accurate to the best of their knowledge. Thereafter the applicant will be invited to select a flat in Park Belvedere and enter into a provisional sale and purchase agreement. The applicant afterwards will be required to sign the formal agreement for sale and purchase at Housing Society's solicitors' office unless the applicant instructs his own solicitor.
4. The successful applicant after selecting the flat can arrange mortgage only with such banks or other financial institutions approved by Housing Society for the purpose of financing the purchase of his/her unit in such form and containing such provisions as Housing Society shall approve or require.
5. If an applicant fails to purchase a flat due to over-subscription, his/her name can remain on the preliminary register.

RESTRICTIONS FOR PURCHASE OF FLATS IN PARK BELVEDERE

1. The successful applicant must be the sole or a joint purchaser of the property selected.
2. Every person included in the successful application will be required to live in the property acquired under the Scheme.
3. All members included in a successful application will be excluded from further enjoyment of any form of housing benefits or subsidies offered now or in the future by Government, the Hong Kong Housing Authority or Hong Kong Housing Society in the form of public rental housing, Home Purchase Loan Scheme, Home Ownership Scheme, Private Sector Participation Scheme, Urban Improvement Scheme, Flat-For-Sale Scheme, Sandwich Class Housing Loan Scheme and Sandwich Class Housing Scheme.
4. The property is sold subject to the following resale restrictions as contained in the Government Grant under which the property is held:
   a. Within a period of 5 years from the date of the assignment to the purchaser of the flat, the purchaser can only sell his/her flat having first offered it back to Hong Kong Housing Society at the original purchase price. In the event that Hong Kong Housing Society is not desirous of purchasing the flat offered by the purchaser, the purchaser may sell the flat in the open market subject to the payment to Housing Society acting on behalf of Government a sum of money equal to that proportion of the full market value of the flat at the time of that payment which is the same proportion of the full market value of the flat at the time of the sale to the purchaser which was not paid by the purchaser at the time of the assignment to him.
   b. After the first 5 years, the purchaser may sell the flat in the open market subject to the payment to Housing Society acting on behalf of Government a sum of money calculated in accordance with the above-mentioned method.
   c. The purchaser shall also bear and pay all necessary administrative costs, valuation costs, legal costs, stamp duty and all other expenses.

A hotline enquiry service for this Scheme
is available from 1 December 1995 to 15 December 1995
Telephone: 2882 2283

The Housing Society reserves the right to update any information contained herein as and when necessary.

Figure 8.14 Page 5 of the Application form of Park Belvedere
(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_1.pdf)

預先登記

夾心階層住屋計劃歡迎符合基本申請資格的家庭申請預先登記。預先登記的申請人可獲房協提供有關計劃及興建中的地盤最新資料，以供參考及在本計劃每次樓宇推出預售時，房協會發出特別通知給申請人。又若由於額滿而未能購得單位的申請人，其名字仍可保留至一九九六年十二月三十一日，毋須另繳申請費便可參加下一期推出的預售申請。

基本申請資格

1 每份申請書須包括最少兩名居住香港的人士（連申請人在內），並須為直系親屬。（註一）
2 每月家庭總收入介乎港幣二萬五千零一元至五萬元之間。申請人須為家庭中最高收入成員。（註二）
3 申請人及家庭成員必須在現時及在每次樓宇推出預售的截止日期前二十四個月內及審批期間，在香港沒有擁有任何住宅物業。（註三）
4 申請人須年滿十八歲，已在香港居住滿七年或以上，並擁有香港居留權或持有香港身份證而其在港的居留並不受香港人民入境事務處所限制。（註四）
5 申請人及家庭成員擁有總資產淨值不超過港幣一百萬元。
6 申請人及家庭成員均不能擁有公共房屋或居屋的登記戶籍，已／正享用政府提供之自置居所資助，除非該等資助是用作購買夾心階層住屋計劃的單位。（註五）

申請資格細則於每期樓宇預售前均須覆核及調整，詳情將於以後每次接受申請時公佈。

註一：

(i) 家庭成員只包括配偶，申請人或配偶的親生子女或合法領養子女、父母親及／或兄弟姊妹或其配偶。
(ii) 申請人若與未滿十八歲及年滿十八歲而沒有工作的兄弟姊妹共同申請，其父母亦須一併列入申請書內。

註二：

以下各項將計算入家庭收入之內：
(i) 除稅前之基本薪金、工資、固定及不固定花紅、佣金、退休金及一切津貼，惟綜合社會保障援助計劃的老人津貼及傷殘津貼除外。基本薪金及工資以申請書批出時所賺取的薪酬計算。
(ii) 申請人及申請書內所有家庭成員其名下擁有在香港或海外房地產（住宅或非住宅）、生意、經營生意或股份一切投資項目中得到的收入，不得扣除按揭供款、稅項及其他支出。
(iii) 計算不固定收入或總收入中的不固定部份，以過去十二個月之平均數為準。

註三：

(i) 申請人或申請書內任何家庭成員擁有或擁有部份股權的私人公司所持物業，將視為由申請人或該家庭成員所擁有。
(ii) 申請人或申請書內任何家庭成員在下列情況下，亦當被視作擁有住宅物業：
(a) 已簽署有效的買賣合約購買住宅物業；或
(b) 作為遺產受益人，而遺產中包括住宅物業；或
(c) 擁有住宅物業，而已簽署有效的買賣合約出售該物業。
(iii) 上述第(ii)項所涉及的情況祇作闡釋申請資格第三項中有關擁有物業之用，並未概括所有情況。

註四：

居港年期以申請人身份證上所示資料或人民入境事務處的紀錄為準。

註五：

下列人士不符合申請資格：
(i) 香港房屋委員會、香港房屋協會及香港平民屋宇有限公司轄下公共屋邨、臨時房屋區及平房區住戶登記冊或租約上列名之人士。
(ii) 在香港房屋委員會「居者有其屋計劃」、「私人機構參建居屋計劃」、「中等入息家庭屋邨——美樂花園」、「自置居所貸款計劃」、香港房屋協會「住宅發售計劃」、「夾心階層住屋貸款計劃」及「夾心階層住屋計劃」等住戶登記冊上列名之業主及其申請書內的家庭成員（包括已享用上述計劃之前業主）。
(iii) 已享用或正享用政府自置居所資助計劃的人士，除非該等資助是用作購買夾心階層住屋計劃的單位。

馬鞍山雅景臺

申請資格

夾心階層住屋計劃之馬鞍山雅景臺現接受申請，基本資格如下：
1. 每份申請書須包括最少兩名居住在香港的人士（連申請人在內），並須為直系親屬。（註一）
2 每月家庭總收入介乎港幣二萬五千零一元至五萬元之間。申請人須為家庭中最高收入成員。（註二）
3 申請人及家庭成員，必須在一九九五年十二月十五日前二十四個月內及審批期間，在香港並無以任何形式，直接或間接擁有任何住宅物業（如有爭議，房協的決定為最後的決定）。（註三）
4 申請人須年滿十八歲，已在香港居住滿七年或以上，並擁有香港居留權或持有香港身份證而其在港的居留並不受香港人民入境事務處所限制。（註四）
5 申請人及家庭成員擁有總資產淨值不超過港幣一百萬元。（註五）
6 申請人及家庭成員均不能擁有公共房屋或居屋的登記戶籍，或已／正享用政府提供之自置居所資助，除非該等資助是用作購買夾心階層住屋計劃的單位。（註六）

註一：

(i) 家庭成員只包括配偶（須提交一九九五年十二月十五日或以前發出之結婚證書），申請人或配偶的親生子女或合法領養子女、父母親及／或兄弟姊妹或其配偶。
(ii) 單親家庭須提供配偶死亡證或有效離婚證明文件及子女合法撫養權的證明文件，否則申請人的配偶及兩人所有子女均須列入申請書內。
(iii) 申請人若與未滿十八歲或年滿十八歲而沒有工作的兄弟姊妹共同申請，其父母亦須一併列入申請書內。
(iv) 祇有下列家庭組合可獲考慮，優先次序如下：

優先次序	家庭組合
第一優先	申請人＋配偶及／或子女
第二優先	申請人＋父母
第三優先	申請人＋兄弟姊妹

Figure 8.15 Page 6 of the Application form of Park Belvedere
(Source: Hong Kong Housing Homepage, City University of Hong Kong
http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_1.pdf)

註二：

(i) 申請人及申請書內所有在職的家庭成員均須提交由現職僱主發出之薪金證明書。
(ii) 申請人及申請書內所有家庭成員須申報在一九九五年十二月十五日以前二十四個月內名下擁有或以信託人或其他名義擁有在香港或海外之房地產（住宅或非住宅）、車輛、經營生意或股份（上市公司股份除外）的詳情。
(iii) 申請人及所有有收入的家庭成員必須呈交過去一年之入息報稅表及／或繳稅通知單或其他認可文件。
(iv) 以下各項將計算入家庭收入之內：
(a) 退休前之基本薪金、工資、固定及不固定花紅、佣金、退休金及一切津貼，惟綜合社會保障援助計劃的老人津貼及傷殘津貼除外。基本薪金及工資以申請審批期間所賺取的薪酬計算。
(b) 由上述(i)項提及的一切投資項目中得到的總收入，不得扣除按揭供款、稅項及其他支出。
(c) 計算不固定收入或總收入中的不固定部份，以過去十二個月之平均數為準。
(d) 申請人如為自僱，則須另呈交經核數師簽署核最近期課稅年度的賬目及入息繳稅摘知單，作為入息證明。

註三：

(i) 申請人或申請書內任何家庭成員擁有或擁有部份股權的私人公司所持物業，均視為由申請人或該家庭成員所擁有。
(ii) 申請人或申請書內任何家庭成員在下列情況下，亦會被視作擁有住宅物業：
(a) 已簽署有效的買賣合約購買住宅物業；或
(b) 作為遺產受益人，而遺產中包括住宅物業；或
(c) 擁有住宅物業，而已簽署有效的買賣合約出售該物業。
(iii) 上述第(i)項所提及的情況祇作闡釋申請資格第三項中有關擁有物業之用，並未概括所有情況。

註四：

居港年期以申請人身份證上所示資料或入民入境事務處的記錄為準。

註五：

申請人及申請書內所有家庭成員必須申報其在本港或海外擁有的總資產現值，包括房地產物業（扣除有關之按揭貸款額）、公司股份及股票、車輛、銀行存款及單位信託基金的現值。此外，申請人及申請書內所有家庭成員亦必須申報以信託人或其他名義擁有任何物業的詳情。

註六：

下列人士不符合申請資格：

(i) 香港房屋委員會、香港房屋協會及香港平民屋宇有限公司轄下公共屋邨、臨時房屋區及平房區住戶登記冊或租約上列名之人士。
(ii) 在香港房屋委員會「居者有其屋計劃」、「私人機構參建居屋計劃」、「中等入息家庭屋邨——美業花園」、「自置居所貸款計劃」、香港房屋協會「住宅發展計劃」、「夾心階層住屋貸款計劃」及「夾心階層住屋計劃」等住戶登記冊上列名之業主及其申請書內的家庭成員（包括已享用上述計劃之前業主）。
(iii) 已享用或正享用政府自置居所資助計劃的人士，除非該等資助是用作購買夾心階層住屋計劃的單位。

申請書甄選程序

1. 申請書將採用電腦抽籤方式編配次序號碼，抽籤結果將於一九九五年十二月三十日在南華早報及星島日報刊登，並會張貼於各房委辦事處以供市民查閱。此外申請人亦將獲得函件通知其獲配的次序號碼。
2. 房委將根據電腦抽籤號碼及家庭組合類別優先次序接見申請人，直至推選每八百八十二個單位全部售罄。申請人必須於限定之日期內提供所需文件以證明申請符合資格，若證明文件不足，申請將不受理。
3. 所有合格申請人及其十八歲或以上的家庭成員須依照香港法例理宣誓，保證所提供的資料均屬事實。然後即可依先後次序選購雅景臺單位及簽署臨時買賣合約並於指定日期內到律師事務所簽署正式買賣合約。
4. 選購物業後，申請人可向獲房委批准之銀行或財務機構辦理按揭手續。
5. 若因籌滿而申請人未能成功購得單位，其名字可保留在預先登記冊內。

限制

1. 所選購物業須由申請人單獨擁有或與申請書內任何家庭成員聯名擁有。
2. 獲批申請書內的所有家庭成員必須居住於根據夾心階層住屋計劃購入的物業內。
3. 獲批申請書上所有家庭成員，一概不得再享用由政府、香港房屋委員會及香港房屋協會今後所提供的任何住屋福利或津貼，包括出租公共房屋、自置居所貸款計劃、居者有其屋計劃、私人機構參建居屋計劃、市區改善計劃、住宅發展計劃、夾心階層住屋貸款計劃及夾心階層住屋計劃等。
4. 在此計劃出售的物業須受該物業的政府批地契約內所列明的轉售條件限制：
(i) 在該單位完成物業交易日起計五年內，買方須照原來買價將單位轉讓予香港房屋協會。如果房屋協會不願接納是項轉讓，買方可自行公開發售，但須先向政府繳付一筆款項，這筆款項是根據屆時該單位無轉讓限制之市值，按照原來未付的十足市值差額依比例計算。
(ii) 遷入物業滿五年後，買方可根據上述規定之方式計算，先向政府繳付一筆款項，然後方可將單位自行公開出售。
(iii) 買方並須繳交所需手續費、單位信值費、律師費、印花費及其他一切規定之款項。

由一九九五年十二月一日至一九九五年十二月十五日內
如有查詢
請撥熱線電話：二八八二 二二八三

香港房屋協會保留權利就以上內容作出修正。

Figure 8.16 Page 7 of the Application form of Park Belvedere
(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_1.pdf)

WORKED EXAMPLES

1. Computation of Income

1.1 If the applicant is an employee, his/her monthly income will be calculated as follows:-

a) Applicant's current basic salary per month
b) Applicant's irregular over-time allowance for the past 12 months
c) Applicant's year-end double-pay and bonus for the past 12 months

Applicant's total monthly income:

1.2 If an applicant is the owner of a business, his/her monthly income will be calculated as follows:

ABC Company Limited
Allocation of shares (Suppose Mr W is the applicant)
1. Mr W (Applicant) 60%
2. Mr Y (Shareholder) 40%

Profit & Loss account for the previous financial year

1. Directors' remuneration for the past 12 months
   a) Mr W
   b) Mr Y

2. Net profit before taxation for the past 12 months

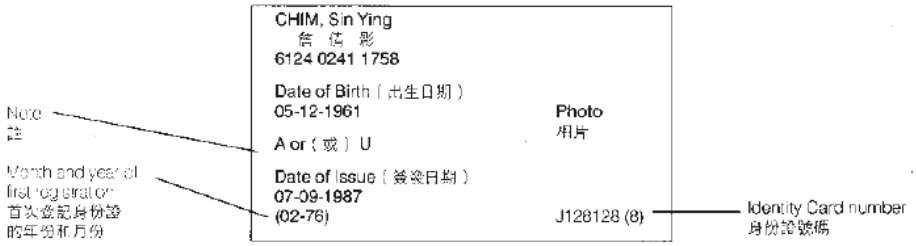
Mr W's monthly income:

If Mr W also draws salary from the business, the calculation method of his salary will be the same as that shown in 1.1 and this amount will be added to his total monthly income.

2. Calculation of assets as at the time of assessment

Assets	
I) Industrial premises (the current market value according to Valuation Report)	
LESS: Outstanding mortgage loan	
II) Car	
LESS: Outstanding loan & depreciation	
III) Shares & stocks of listed companies	
IV) Assets in business	
V) Bank deposits	
VI) Unit trust funds	
Total Assets	

3. Information on Hong Kong Identity Card regarding year and type of residence in Hong Kong



Note:
A – the holder has the right of abode in Hong Kong.
U – the holder's stay in Hong Kong is not limited by the Immigration Department at the time of his/her registration of the card.

舉例

1. 入息計算

1.1 如申請人為僱員，每月入息計算如下：

a) 申請人現時每月底薪 $ 23,000.00
b) 申請人過去十二個月不固定的超時津貼 $ 13,932.00
c) 申請人過去十二個月的年終雙糧及花紅 $ 49,000.00

申請人的每月總入息：
$23,000.00 + ($13,932.00 + $49,000.00) ÷ 12
= $23,000.00 + $5,244.33
= $28,244.33

1.2 申請人如為自僱，其每月入息計算如下：

A B C 有限公司
股份分配（如W先生為申請人）
1. W先生 （申請人） 60%
2. Y先生 （股東） 40%

最近財政年度收支損益表

1. 過去十二個月份之股東酬金
   a) W先生 $ 240,000.00
   b) Y先生 $ 160,000.00
   $ 400,000.00

2. 過去十二個月份課稅前之純利 $ 300,000.00

W先生的每月入息：
($240,000.00 ÷ 12) + ($300,000.00 ÷ 12) ×60%
=$20,000.00 + $15,000.00
=$35,000.00

若W先生亦從公司支取薪金，其薪金之計算方法與上述1.1方法相同，而此數目將一併計算在W先生的每月總入息內。

2. 審批期間之資產計算

資產	Value 價值	
I) 工業樓宇（根據估價報告之現時市值價）	$ 1,680,000.00	
減去未償還之貸款額	$ 1,100,000.00	
		$ 580,000.00
II) 車輛	$ 220,000.00	
減去折舊及未償還之貸款額	$ 150,000.00	
		$ 70,000.00
III) 上市公司之股票		$ 80,000.00
IV) 自營生意的資產		$ 100,000.00
V) 銀行存款		$ 75,000.00
VI) 單位信託基金		$ 50,000.00
總資產		$ 955,000.00

3. 香港身份證正面所載有關居留權及居港年期資料

註：
A — 持證人擁有香港居留權。
U — 持證人登記領證時在香港的居留不受入境事務處的限制。

Figure 8.17 Page 8 of the Application form of Park Belvedere

(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_1.pdf)

Appendix 10 – Sales Brochure of Park Belvedere (1995 version)

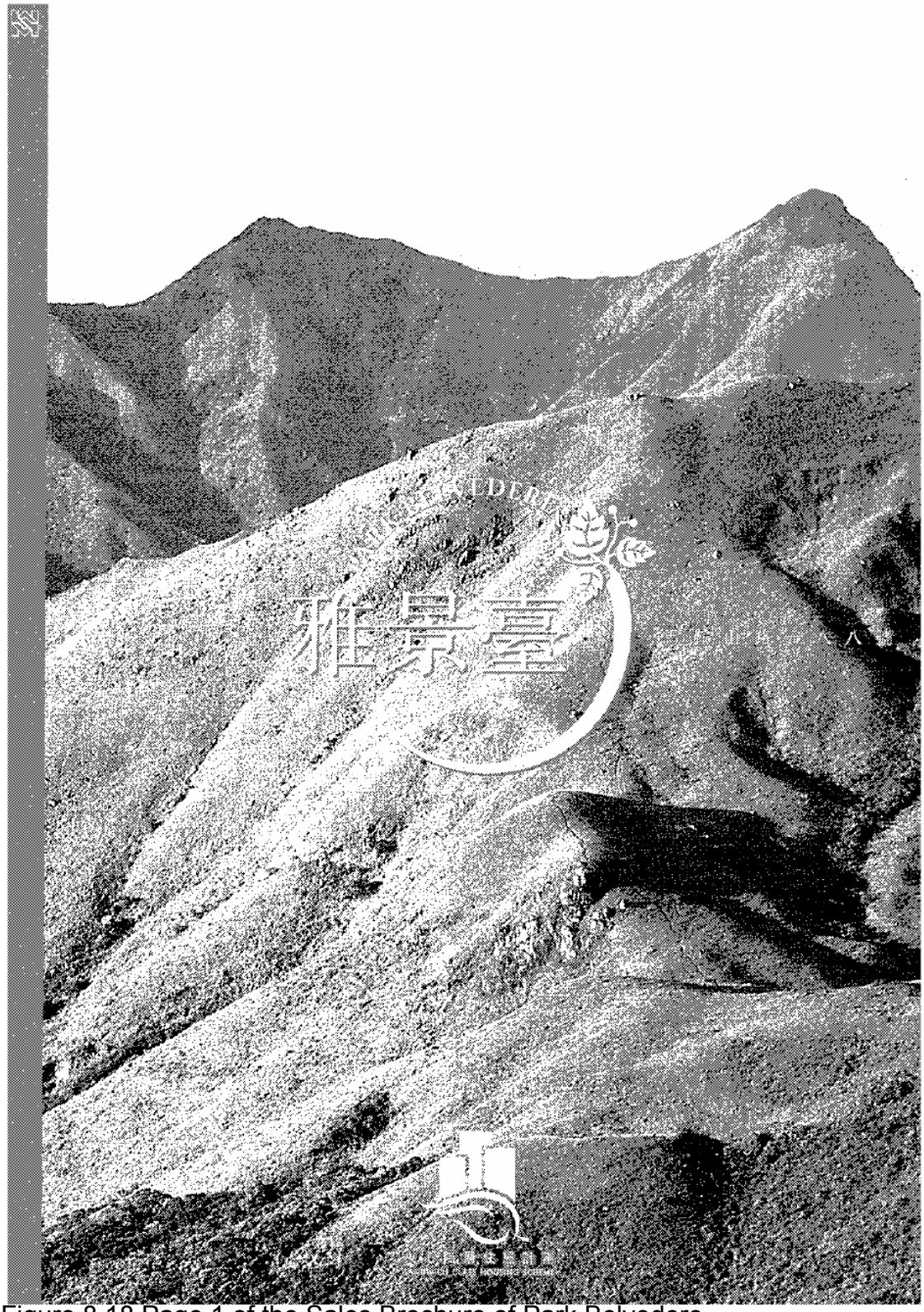
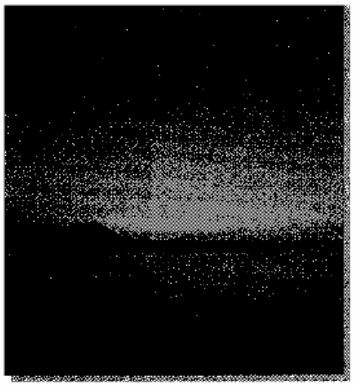


Figure 8.18 Page 1 of the Sales Brochure of Park Belvedere
(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_2.pdf)



雅景臺

馬鞍山路一八八號

雅景臺矗立於馬鞍山新市鎮市中心，東臨馬鞍山郊野公園，西眺八仙嶺及吐露港，鄰近烏溪沙青年營及西貢郊野公園，康樂活動，各式其色。 屋苑設計：雅景臺由著名建築師設計，大廈基座之上建有四幢樓高三十六至三十七層住宅大廈，共提供八百八十二個單位；每層六伙，建築面積約六百二十五至八百七十三平方呎，分屬兩房兩廳及備有主人套房之三房兩廳與四房兩廳單位。此外，本園基座建有住客停車場及佔地萬餘呎之住客會所，提供充足車位及康樂設施；大廈平台則修築園林花樹及兒童遊樂場，起居停當，自是悠然自得。 社區設施：馬鞍山新市鎮社區規劃周全，基本設施一應俱備，如幼稚園、中／小學校、街市、室內運動場、公眾游泳池及市鎮公園等；又毗鄰多個大型商場，消閒購物，稱心暢快。 交通網絡：馬鞍山新市鎮擁有完善交通網絡，並藉多條高速公路及九廣鐵路接通中、港。待通往大圍之輕便鐵路啟用後，區內外交通服務，更見便捷。

大廈入口大堂，配襯大型玻璃幕牆，氣派典雅不凡。大堂的牆身地台、飾柱細緻，配襯壁骨雲石點綴，盡顯高雅品味。每戶住宅單位均為精心設計，且隨格實用，各項建材亦為精雅細緻。

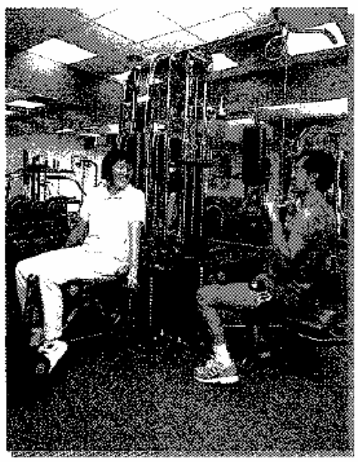


Figure 8.19 Page 2 of the Sales Brochure of Park Belvedere
(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_2.pdf)

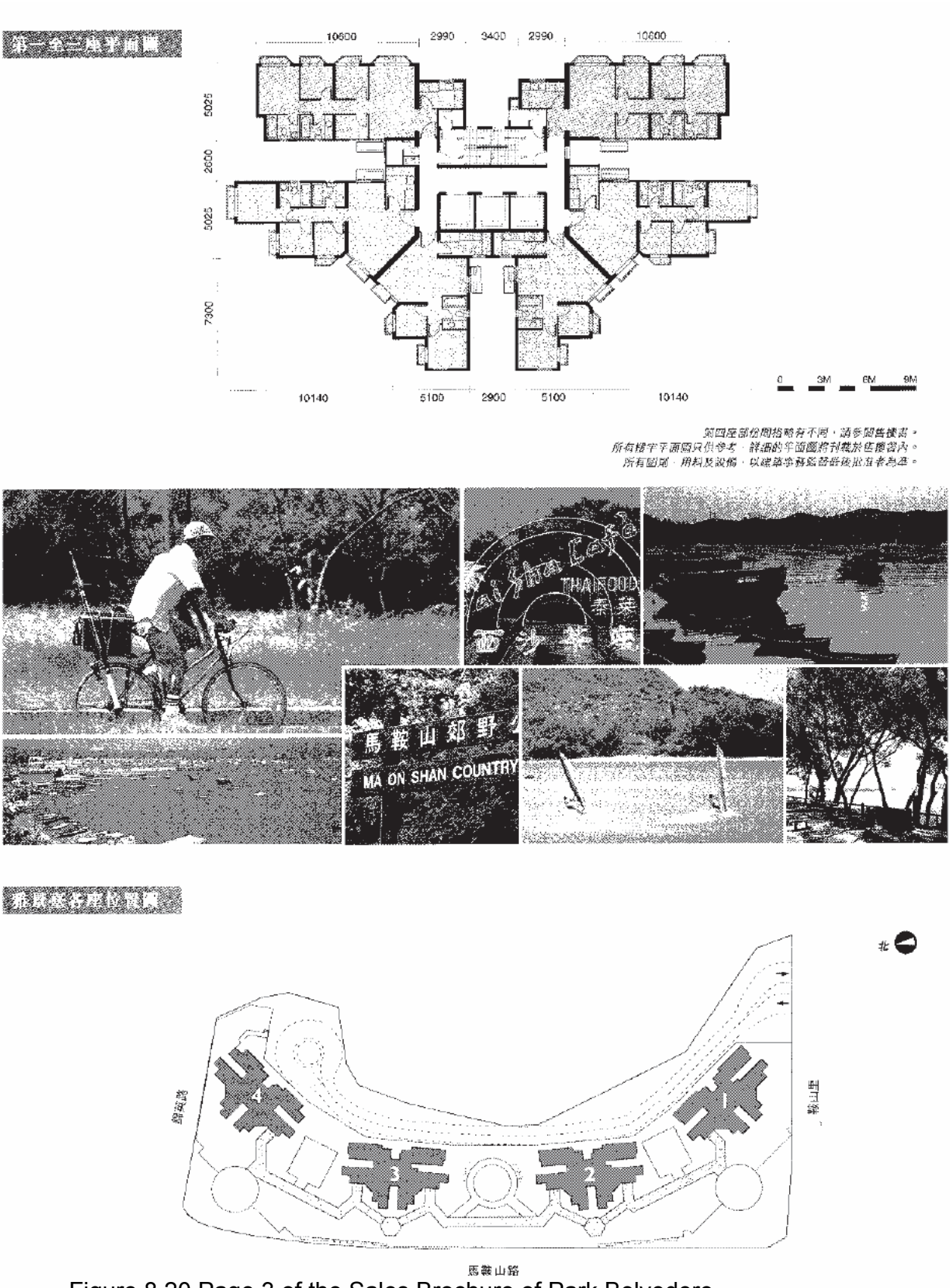
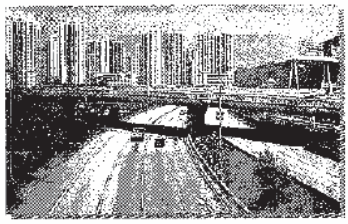
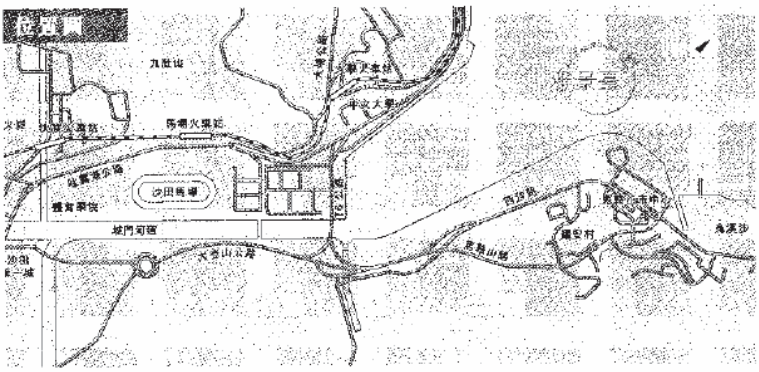


Figure 8.20 Page 3 of the Sales Brochure of Park Belvedere

(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_2.pdf)





位處馬鞍山市中心，毗鄰之大型購物商場設有百貨公司、酒樓食肆、超級市場及銀行服務。

夾心階層住屋計劃 — 馬鞍山 雅景臺

- **申請購買日期：**
  一九九五年十二月一日
  至
  一九九五年十二月十五日

- **地盤示範單位：**
  於申請期間每日上午十時至下午七時正開放

- **穿梭巴士：**
  參觀者可於申請期間之週末及週日到下列地點乘搭免費巴士前往地盤示範單位：
  1 沙田希爾頓中心門口
  2 中文大學火車站出口
  3 藍田地鐵站西發道出口
  註：每班巴士相隔大約半小時

查詢熱線電話：2882-2283

注意事項：

1 馬鞍山雅景臺只供經甄選後確定合格的「夾心階層住屋計劃」的申請人購買。

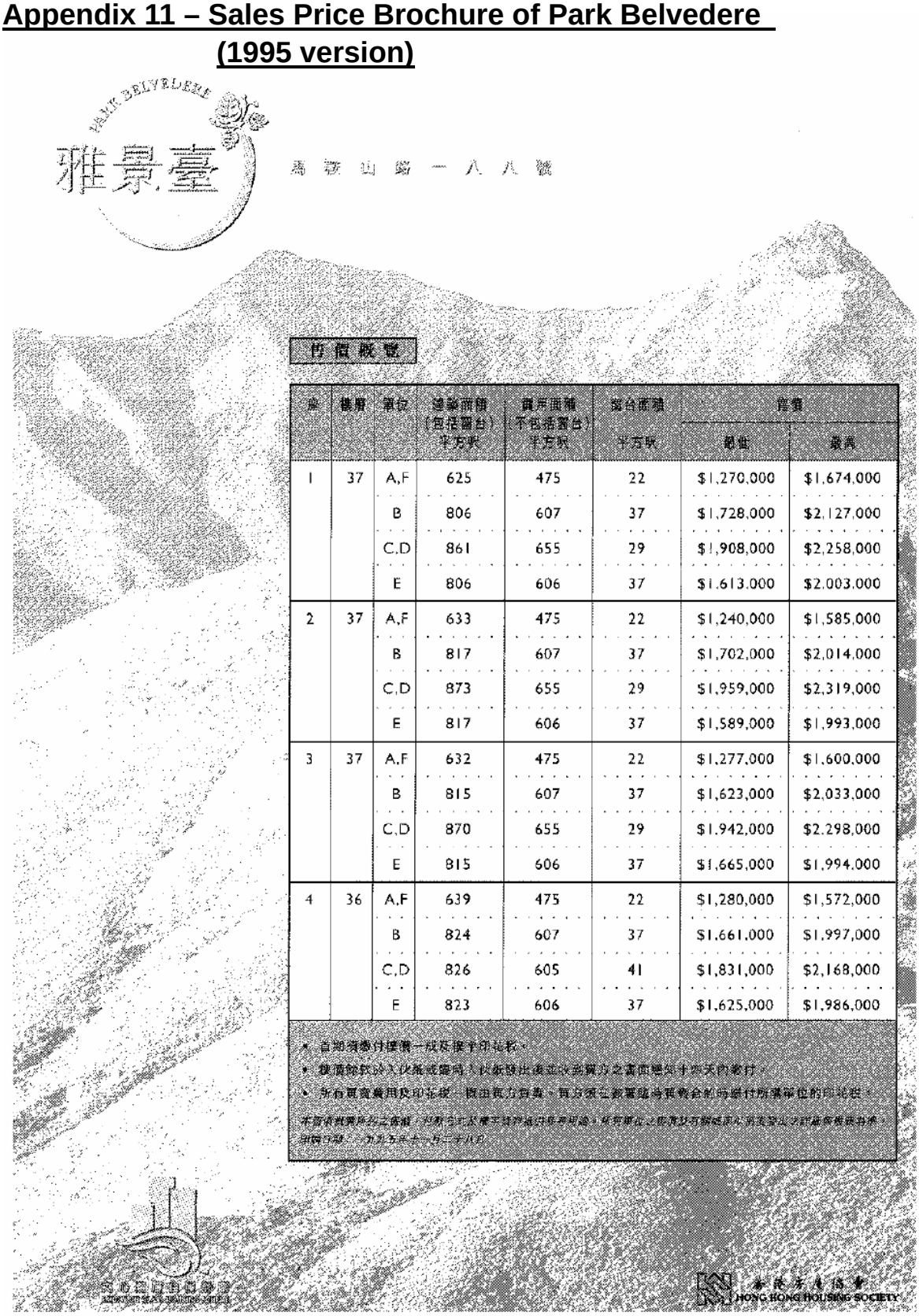
2 買方於簽訂轉讓契約後五年之內所購單位之轉讓、抵押等等將受到官批地契之特別條款所限制。五年後可自由轉讓，但須先繳付手續費及向政府繳付一筆款項。有關詳細之轉讓限制，一切以官批地契為準。

3 本簡介內一切資料只作臨時參考用途。入選申請人應以稍後發出之售樓書所載資料為其抉擇之依歸。

香港房屋協會
HONG KONG HOUSING SOCIETY

Figure 8.21 Page 4 of the Sales Brochure of Park Belvedere
(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_2.pdf)

Appendix 11 – Sales Price Brochure of Park Belvedere (1995 version)



座	樓層	單位	建築面積（包括露台）平方呎	實用面積（不包括露台）平方呎	露台面積 平方呎	售價 最低	售價 最高
1	37	A,F	625	475	22	$1,270,000	$1,674,000
		B	806	607	37	$1,728,000	$2,127,000
		C,D	861	655	29	$1,908,000	$2,258,000
		E	806	606	37	$1,613,000	$2,003,000
2	37	A,F	633	475	22	$1,240,000	$1,585,000
		B	817	607	37	$1,702,000	$2,014,000
		C,D	873	655	29	$1,959,000	$2,319,000
		E	817	606	37	$1,589,000	$1,993,000
3	37	A,F	632	475	22	$1,277,000	$1,600,000
		B	815	607	37	$1,623,000	$2,033,000
		C,D	870	655	29	$1,942,000	$2,298,000
		E	815	606	37	$1,665,000	$1,994,000
4	36	A,F	639	475	22	$1,280,000	$1,572,000
		B	824	607	37	$1,661,000	$1,997,000
		C,D	826	605	41	$1,831,000	$2,168,000
		E	823	606	37	$1,625,000	$1,986,000

Figure 8.22 Sales Price Brochure of Park Belvedere

(Source: Hong Kong Housing Homepage, City University of Hong Kong http://www.cityu.edu.hk/hkhousing/prm/schs/SCHS_02_3.pdf)

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